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OF

SPORTS AND PASTIMES

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HIS GRACE THE DUKE OF BEAUFORT, K.G.

ASSISTED BY ALFRED E. T. WATSON

BIG GAME SHOOTING

II.

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HAND TO HAND WORK

BIG GAME SHOOTING

BY

CLIVE PHILLIPPS-WOLLEY

WITH CONTRIBUTIONS BY

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WALTER J. BUCK, AND ST. GEORGE LITTLEDALE

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VOL. II.

WITH ILLUSTRATIONS BY CHARLES WHYMPER
AND FROM PHOTOGRAPHS

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CONTENTS

OF

THE SECOND VOLUME

CHAPTER		PAGE
I.	ARCTIC HUNTING *By Arnold Pike.*	1
II.	THE CAUCASUS *By Clive Phillipps-Wolley.*	22
III.	MOUNTAIN GAME OF THE CAUCASUS *By Clive Phillipps-Wolley.*	48
IV.	CAUCASIAN AUROCHS *By St. G. Littledale.*	65
V.	OVIS ARGALI OF MONGOLIA *By St. G. Littledale.*	73
VI.	THE CHAMOIS *By W. A. Baillie-Grohman.*	77
VII.	THE STAG OF THE ALPS *By W. A. Baillie-Grohman.*	112
VIII.	THE SCANDINAVIAN ELK *By Sir Henry Pottinger, Bart.*	123
IX	EUROPEAN BIG GAME *By Major Algernon Heber Percy, and the Earl of Kilmorey.*	154

CHAPTER		PAGE
X.	THE LARGE GAME OF SPAIN AND PORTUGAL . . *By Abel Chapman and W. J. Buck.*	174
XI.	INDIAN SHOOTING . . . . *By Lieut.-Col. Reginald Heber Percy.*	182
XII.	THE OVIS POLI OF THE PAMIR . . . . . . *By St. G. Littledale.*	363
XIII.	CAMPS, TRANSPORT, ETC. . . . . *By Clive Phillipps-Wolley.*	377
XIV.	A FEW NOTES ON RIFLES AND AMMUNITION . . *By H. W. H.*	394
XV.	HINTS ON TAXIDERMY, ETC. . . . . . . *By Clive Phillipps-Wolley.*	413
	A SHORT BIBLIOGRAPHY	421

INDEX 425

	ARTIST	
A Snap-shot in the Forest . .	Major H. Jones to face p.	278
'With cartridges handy and steady shooting'	. . . ,,	322
Mr. St. George Littledale's Bag of Ovis Poli, 1888	From a photograph ,,	374
The Camp	C. Whymper ,,	378

WOODCUTS IN TEXT.

Among the Ice	C. Whymper . .	1
A Walrus' Head	From a photograph after Mr. Lamont	5
Where to Shoot a Walrus		7
Waiting for the Dawn	C. Whymper . .	27
The Boar's Charge.		33
A Gutturosa		45
Dead Aurochs.	After a photograph from Nature	65
The Spy Chamois		79
Emperor Maximilian I. Chamois Hunting, A.D. 1500	After Theuerdank .	110
Antlers of Stags killed at Radauc, in the Pilis Mountains and the Jolsva Estates	. . . . .	115
Specimen Heads of Scandinavian Elks	From a photograph .	129
Stalking Elk	C. Whymper . .	152
'This time his side was towards me'	,, . .	158
Group of Aurochs	,, . .	168
Aurochs' Heads	C. W., from a photograph	171
The Lynx (*Felis pardina*)	C. Whymper . .	174

ILLUSTRATIONS

IN THE

SECOND VOLUME

(*Reproduced by Messrs. Walker & Boutall*)

FULL-PAGE ILLUSTRATIONS

	ARTIST		
HAND TO HAND WORK	*C. Whymper*	*Frontispiece*	
DEATH OF A POLAR BEAR		*to face p.*	16
THE CORPSE ROCKS	*C. Whymper*	,,	20
MR. ST. G. LITTLEDALE'S CAUCASIAN BAG FOR THE SEASON OF 1887	*From a photograph*	,,	36
'STANDING LIKE STATUES'	*C. Whymper*	,,	48
IBEX (*Hircus ægagrus*)	,,	,,	52
THE SPECTRE		,,	62
CHAMOIS	*From an instantaneous photograph*	,,	80
SPANISH IBEX	*C. W., after a sketch by A. Chapman*	,,	180
THE FIRST STALK OF THE SEASON		,,	184
A FAIR CHANCE AT BLACK BEARS	*C. Whymper*	,,	186
'THE FRONT RANK AND PART OF THE SECOND ALONE STOOD FIRM'		,,	208
A CHARGING GAUR		,,	242

	ARTIST	PAGE
Snow-Bears	*Major H. Jones*	187
A Glorified Comet	*C. W., after sketches by Capt. Rawlinson*	189
Howdah Shooting		196
Landing a Ghayal		239
'He gave him a tremendous punishing'		255
Hogdeer Shooting		262
Rucervus Duvaucelli	*From a photograph*	266
Rucervus Schomburgkii		267
Panolia Eldii		269
A Stalk in the Open	*C. W., after Major H. Jones*	281
Specimen Heads of Ovis Poli and Ovis Karelini	*From photographs*	292
Specimen Heads of Ovis Ammon and Ovis Nivicola		293
The Astor Markhor	*C. W., after sketch by Capt. Rawlinson*	310
Varieties of Markhor	*From photograph*	312
In his Summer Coat	*C. Whymper*	318
Specimen Heads of Capra sibirica, Capra ægagrus, and Capra sinaitica	*From photograph*	322
A Dream of Ther Shooting	*C. W., after sketch by Capt. Rawlinson*	326
The Serow gallops down hill	*C. Whymper*	333
Budorcas taxicolor	*From photograph*	335
Saiga tartarica		345
Tame Decoys	*C. Whymper*	351
Ovis Poli	,,	363
Our Camp		367

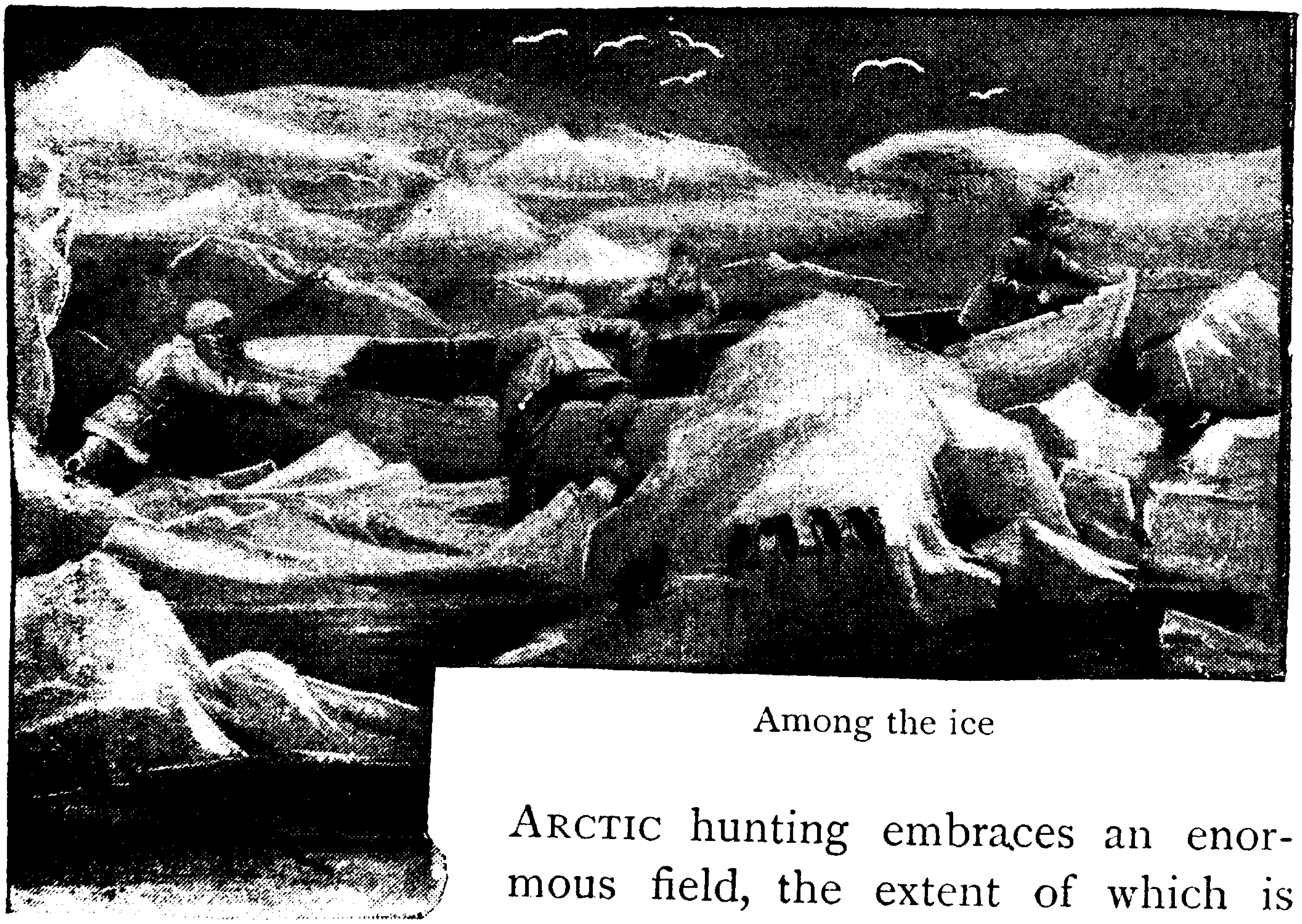
	ARTIST	PAGE
DEAD OVIS POLI		376
CINCH HIM UP		381
KNIFE FASTENING		388
'GOOD-BYE TO THE GROCERIES'		391
SPECIMENS OF 340, 360, 440, AND 460 GRAIN EXPRESS BULLETS	*From a photograph*	395
SPECIMENS OF ·500 AND ·577 BORE EXPRESS BULLETS		396
SPECIMENS OF ·450 AND ·577 BORE EXPRESS BULLETS		397
SPECIMENS OF SOFT ·577 BULLETS		398
SPECIMENS OF 12-BORE 'PARADOX' BULLETS		400
DIAGRAM SHOWING SIX SHOTS WITH 10 BORE AND 8-BORE 'PARADOX'		400
DIAGRAM OF 8-BORE 'PARADOX' BULLET		401
SIR SAMUEL BAKER'S STRENGTHENED STOCK		406
RIFLE LOOPS		407
'SHIKARI' RIFLE CASE		408
BACK SIGHTS		408
WHEN THE LIGHT WANES	*C. Whymper*	414
WAPITI HEAD		419

BIG GAME SHOOTING

CHAPTER I

ARCTIC HUNTING

BY ARNOLD PIKE



Among the ice

ARCTIC hunting embraces an enormous field, the extent of which is not yet realised, and I should begin by remarking that my experience, as here set forth, is limited to the seas around Spitzbergen, and that I propose to confine myself to the pursuit of the walrus and the polar bear.

Although the vast herds of walrus which formerly inhabited the Spitzbergen and Novaya Zemlya seas have been sadly

thinned by persistent—and often wasteful—hunting, first by the English and Dutch in the early part of the seventeenth century, then by the Russians, and at the present day by the Norwegians, yet enough may still be killed in a season's hunting to satisfy most sportsmen. The fact that the expeditions after walrus and polar bear which are made to these waters are often partially, or wholly, unsuccessful is due not to the scarcity of game but to the manner in which it is sought. The sportsman usually sails in a yacht—a vessel totally unfit for the work before her—and at Tromsö or Hammerfest picks up an ice pilot, who is also supposed to show where sport is to be obtained, at a season of the year when all the best men are engaged to, or have already sailed with, the professional walrus hunters. The consequences are that the voyage is confined to the open, and therefore easily navigated, waters of the western coast of Spitzbergen, or else that if good hunting grounds are visited much of the game is not seen; for no matter how keen a look-out a man may keep, he is sure to pass over game if he is not used to hunting, and does not know exactly what to look for and where to look for it.

The best way, therefore, in the writer's opinion, is for the sportsman to hire one of the small vessels engaged in the trade, sailing either from Hammerfest or Tromsö (preferably from the latter port). He could hire a walrus sloop of about forty tons burden for the season, completely fitted out with all the necessary gear and boats, and a crew of nine men (seven before the mast) for about 450*l.* This amount would cover everything except tinned soups, meat, &c., for his own consumption; and the expenditure is not all dead loss, for if he allows one boat's crew to regularly hunt seal, whilst he devotes himself principally to bear and walrus, he will probably realise a sum by the sale of skins and blubber, at the conclusion of the voyage, which will meet the greater portion, if not the whole, of the amount paid for the hire of the vessel. There is no difficulty in disposing of the 'catch.' If, however, a sportsman decides to go in his own yacht, with an English crew, he

should engage during the winter, through the British vice-consul at Tromsö, a good harpooner and three men used to arctic work, and buy a hunting boat (fangstbaad), to the use of which they are accustomed, together with the necessary harpoons, lines, lances, knives, &c.

In either case he should sail from Tromsö early in May if bound for Spitzbergen, where he would in ordinary seasons be able to hunt until the middle of September. In that time, with fair luck, he may expect to kill from five to ten bears, about twenty walrus, thirty reindeer, and from three to four hundred seals. If only small attention is paid to the seals, the number of walrus and bear obtained should be considerably larger.

No especial personal outfit is necessary.

As most of the shooting will be done from a boat that is seldom stationary, the rifle to which the sportsman is most accustomed is the best. A ·450 Express, with solid hardened bullet for walrus, and 'small-holed' for bear, is a very good weapon. A fowling-piece for geese and a small-bore rifle for practice at seals would also be useful. Whatever weapons are taken, they should be of simple construction and strongly made, for they are liable to receive hard knocks in the rough, wet work incidental to walrus hunting.

As regards clothing, a light-coloured stalking suit (the writer prefers grey), underclothing of the same weight as the sportsman is accustomed to wear during an English winter, and knee-boots, will answer every purpose. For hand covering the mittens ('vanter') used by the Norwegian fishermen are most suitable. The sportsman had better lay in his stock of canned provisions and tea in England, but coffee, sugar, &c., can be obtained of good quality and equally cheap at his starting point in Norway.

I. WALRUS (*Rosmarus trichechus*)

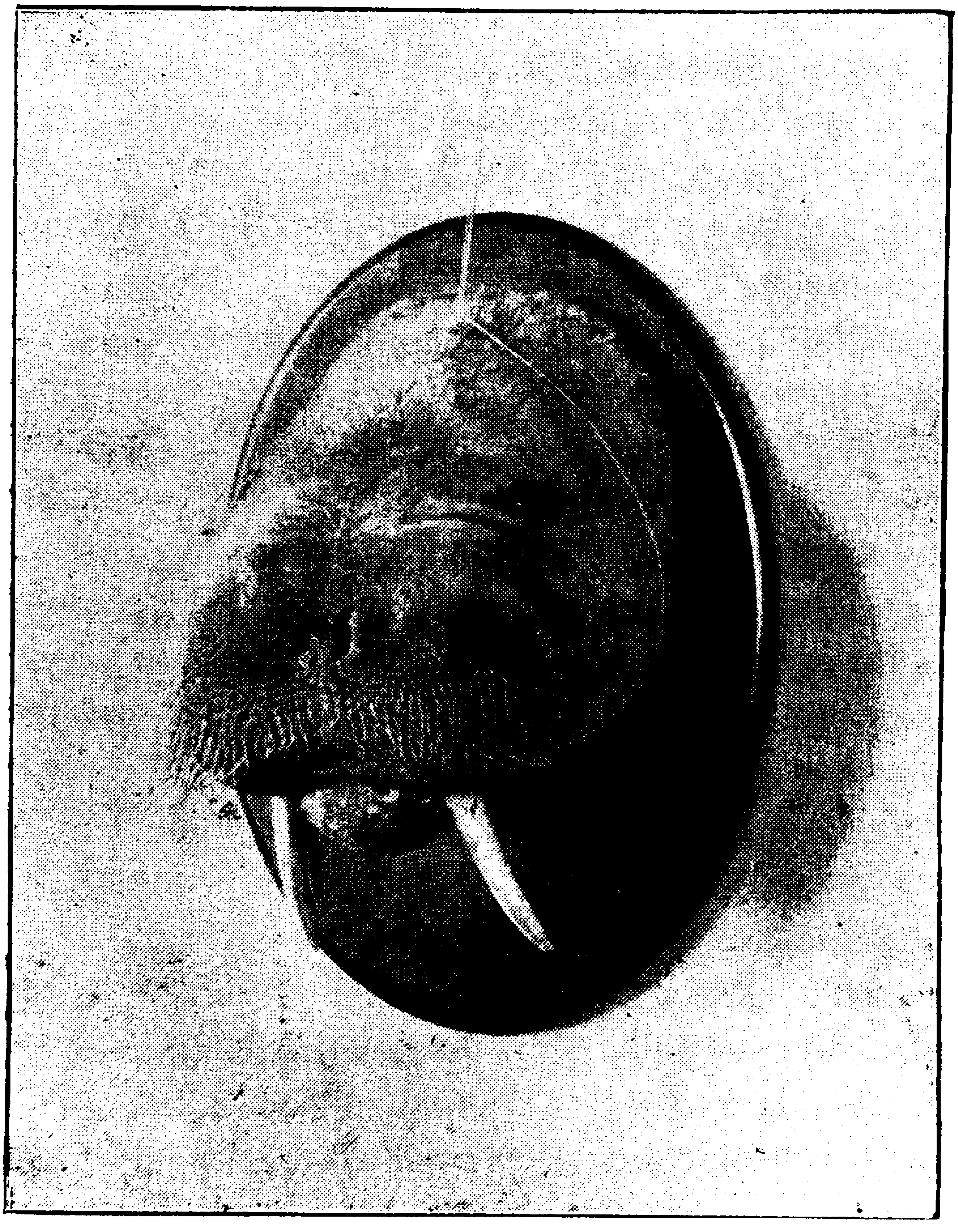
The walrus is one of the largest animals still extant, and although the element of personal danger is not as great in

hunting it as in hunting some beasts of lesser bulk, yet the conditions under which the sport is pursued, as well as the nature of the sport itself, are such as will probably tempt one who has once tried this form of sport to return to it.

An average-sized four-year-old bull walrus will measure 10 ft. in length and about the same in girth. The weight is, of course, difficult to determine, but it is probably about 3,000 lbs., of which 350 lbs. may be reckoned as blubber, and 300 lbs. as hide. A large old bull will probably weigh and yield half as much again. The blubber, to be utilised, is mixed with that of the seals which may be obtained, and the oil which is extracted by heat and pressure sold as 'seal oil'; the hide, which is from 1 in. to 1½ in. in thickness, and makes a soft, spongy leather, is exported principally to Russia and Germany, where it is used for harness, ammunition-boots, &c.

The walrus is a carnivorous animal, feeding mostly upon shellfish and worms, and is therefore generally found in the shallow waters along a coastline, diving for its food on banks which lie at a depth of from two to twenty fathoms below the surface. Deeper than that the walrus does not care to go; in fact, it generally feeds in about fifteen fathoms. The tusks are principally used to plough up the bottom in search of food, but are also employed as weapons, and in climbing on to ice. They are composed of hard, white ivory, set for about 6 ins. of their length in a hard bony mass, about 6 ins. in diameter, which forms the front part of the head; the breathing passage runs through this mass, and terminates in two 'blow-holes' between the roots of the tusks. The tusk itself is solid, except that portion which is embedded in the bone, and this is filled with a cellular structure containing a whitish oil. Both sexes have tusks, but those of the cow do not run quite so large as those of the bull. The yearling calf has no tusks, but at the end of the second year it has a pair about 2 ins. in length, which grow to about 6 ins. in the third year. The largest pair I have measure 18½ ins. round the curve of the tusk from skull to point, and girth 7½ ins. near the base; but I have seen

them much larger, and do not think that anything under 22 ins. can be considered a good head. Cows' tusks are generally set much closer together than bulls', and sometimes meet at the points. There are some good specimens illustrating this peculiarity in the Tromsö Museum. The bulls', on the



A walrus' head

contrary, generally diverge, and are often upwards of a foot apart at the points. I have read and heard that in rare cases the tusks diverge in curves, but have never seen any. I have one head (I was not in the boat when the walrus was killed) with three tusks, two of which spring apparently from the same socket, and there is no doubt that there are heads with four ;

but such cases are, of course, very rare. The comparatively small size of the tusks makes the ivory useless for the manufacture of billiard balls and other things of considerable size, and it does not, therefore, command so high a price as elephant ivory, but it is largely used in the manufacture of small articles.

A walrus killed in the water immediately sinks; even if mortally wounded, it will in nine cases out of ten escape, and sink to the bottom. When on the ice, walrus always lie close to the water, and it is therefore necessary to kill them instantly, or they will reach the water and be lost before the boat can arrive within harpooning distance. This can only be done by penetrating the brain, which is no easy matter. The brain lies in what appears to be the neck; that which one would naturally suppose to be the head being nothing but the heavy jaw bones, and mass of bone in which the tusks are set. In reference to this point, I cannot do better than quote Mr. Lamont, who on this and everything else connected with walrus hunting is a most accurate authority. It is with the kind permission of his publishers, Messrs. Chatto and Windus, that I reproduce his plate 'How to shoot a Walrus.' In his 'Yachting in the Arctic Seas,' page 69, he says:—

No one who has not tried it will readily believe how extremely difficult it is to shoot an old bull walrus clean dead. The front or sides of his head may be knocked all to pieces with bullets, and the animal yet have sufficient strength and sense left to enable him to swim and dive out of reach. If he is lying on his side, with his back turned to his assailant (as in the upper figure), it is easy enough, as the brain is then quite exposed, and the crown of the head is easily penetrated; but one rarely gets the walrus in that position, and when it so happens it is generally better policy to harpoon him without shooting. By firing at an old bull directly facing you, it is almost impossible to kill him, but if half front to you, a shot just above the eye may prove fatal. If sideways, he can only be killed by aiming about six inches behind the eye, and about one-fourth of the apparent depth of his head from the top; but the eye, of course, cannot be seen unless the animal is very

close to you, and the difficulty is enormously increased by the back of the head being so imbedded in fat as to appear as if it were part of the neck. This will be understood by a reference to the plate. If you hit him much below that spot, you strike the jaw-joint, which is about the strongest part of the whole cranium. A leaden bullet striking there, or on the front of the head, is flattened like a piece of putty, without doing much injury to the walrus ; and even hardened bullets, propelled by six drachms of powder, were sometimes broken into little pieces against the rocky crania of these animals.

What becomes of the walrus in the winter it is hard to say, but I have heard them blowing in an open pool of water among the ice on the north coast of Spitzbergen in the month of December. In the spring, however, when the ice begins to break up, they collect in herds on their feeding grounds around the coasts, where they may be found diving for shellfish, or basking and sleeping, singly or in 'heaps' of two or three (often five or six) together. They seem to prefer to lie on small cakes of flat bay ice ; a single walrus will often take his siesta on a cake only just large enough to float him, and it is among such ice therefore, rather than among

Where to shoot a walrus

rough old pack and glacier blocks, that they should be sought, although I have seen them lying on heavy old water-worn ice, four and five feet above the water. In this case, however, they had no choice. Later in the year, in August and during the autumn, particularly in open years, they collect in some bay (formerly they were found in herds thousands strong), and lie in a lethargic state on the shore. I suppose that this is their breeding season, as the young are cast in April and May, and even in June. In former years, the walrus hunters, if they had experienced a bad season, would hang around the coasts as long as they dared, visiting the various places which were known to be favourite spots for the walrus to 'go ashore,' and if they found one occupied, a few hours' work would compensate them for the bad luck of the whole season.

Massing their forces—if, as customary, several sloops were sailing in company—the hunters attacked the walrus with the lance, and, killing those nearest the water first, formed a rampart behind which the rest of the herd were more or less at their mercy, which quality indeed they did not appear to possess; for, fired by excitement and greed, they would slay and slay, until there were far more of the poor beasts lying dead than they could ever hope to make use of. The remnant of the herd would escape, never to return; they would seek each year some spot further towards the north, and therefore more difficult of access to their enemies. Although, doubtless, the walrus still go ashore late in the autumn, they probably choose some of the islands in the Hinlopen Straits, or the coasts of North East Land and Franz Joseph Land, where the hunters cannot approach them, or would not dare to if they could, at that season of the year; and thus it is rare to hear of a herd being found ashore at the present day. This opportunity of having an inaccessible breeding ground will save the walrus from the fate which has overtaken the American bison, of being almost wiped from the face of the earth; and the species will therefore probably continue to exist in large numbers in the far north, after its scarcity in the more acces-

sible waters has caused the professional walrus hunter to abandon his calling. The most likely localities for walrus around Spitzbergen at present are the coast of North East Land, Cape Leigh Smith (Storö), Rekis-öerne, Hopenöerne on the east coast, and the Hinlopen Straits.

Although the staple food of the walrus consists of mollusca, it also preys, to some extent, upon the seal. I remember that, on opening the stomach of the first walrus I shot, we found it full of long strips of the skin of a seal, apparently *Phoca hispida*, with the blubber still attached.[1] As the death of this walrus was fairly typical of the manner in which they are now captured, I will try to describe it; but it would be better perhaps to first sketch the boats and implements which are used in walrus hunting.

The boats, called 'fangstbaade,' are strongly, yet lightly, built of three-quarter-inch Norwegian 'furru.' They are carvel built and bow shaped at both ends; the stem and stern posts are made thick and strong in order to resist the blows of the ice, and the bow sheathed with zinc plates to prevent excessive chafing. They are most commonly 20 ft. or 21 ft. in length, and have their greatest beam, viz. 5 ft., one-third of their length from the bow. It is most important that they should be easy and quick in turning, and this quality is obtained by depressing the keel in the middle. They are painted red inside and white outside, so that they may not be conspicuous amongst ice, but the hunters stultify this idea to some extent by dressing themselves in dark colours. Inside the bow there are small racks guarded by painted canvas flaps, in which the harpoon-heads are fitted, usually three on either side of the boat. The harpoon, the point and edges of which are ground and whetted to a razor-like sharpness, is a simple but very

[1] The harpooner on this occasion, whose word I have never doubted, told me that once when he was hunting in King's Bay, on the west coast of Spitzbergen, he saw a walrus take a 'Hav-hest,' i.e. fulmar petrel, which was sitting on the water, and was actually engaged in eating it when struck by the harpoon.

effective weapon. When thrust into a walrus or seal, a large outer barb 'takes up' a loop of the tough hide, whilst a small inner fish-hook barb prevents it from becoming disengaged, so that when once properly harpooned, it is very seldom, if ever, that an animal escapes through the harpoon 'drawing.' The harpoon-shafts, which lie along the thwarts, are made of white pine poles, 12 ft. in length and from 1 in. to 1½ in. in diameter, tapered at one end to fit the socket of the harpoon-head, in which the shaft is set fast when required by striking its butt against one of the ribs of the boat, or a small block fixed in the after end on the starboard side. The harpoon is used almost entirely as a thrusting weapon, but a *good* man can set one fast by *casting* if the occasion demands it, up to a distance of 20 ft. The harpoon line, which is 'grummeted' round the shank of the head, consists of sixteen fathoms of two-inch tarred rope, very carefully made of the finest hemp, 'soft laid'; each line is neatly coiled in a separate box placed beneath the forward thwart. When a walrus is 'fast,' it is most important that the line should not slip aft—if allowed to do so it would probably capsize the boat—and to help to prevent this, deep retaining notches are cut in two pieces of hardwood fixed one on each side of the stempost, the top of which is also channelled.

The lance also lies along the thwarts, its broad blade contained in a box fixed at the starboard end of the forward thwart. The head weighs about 3½ lbs., and the white pine shafts 5 lbs. to 7 lbs., according to length. It is generally about 6 ft. and tapered from 2½ ins. at the socket to 1½ in. at the handle. The head is riveted to the shaft; two projecting ears run some way up, and are bound to it by a piece of stout hoop iron, for additional security.

Along the thwarts also lie a mast and saff, and several 'hakkepiks,' a form of boathook, most useful for ice work. Another box, fastened to the starboard gunwale, holds a telescope. In the bottom of the boat are twenty-four fathoms of rope, two double-purchase blocks, and an ice anchor; in

addition to its ordinary use, this anchor is employed as a fulcrum by which, with the aid of the blocks and rope, a boat's crew can haul a dead walrus out of the water on to a suitable pièce of ice, to be flensed.

The fore and after peaks are provided with lockers, which should contain a hammer, pair of pliers, nails, and some sheet lead—for patching holes which a walrus may make with his tusks—matches, spare grummets, cartridges, &c., and a small kettle—a small spirit lamp would also be useful—together with coffee and hard bread sufficient for two or three days. An axe and one or two rifles, which lean against the edge of the forward locker, in notches cut to take the barrels, skinning knives, a whetstone, and a compass, which should be in a box fitted under the after thwart, and one or two spare oars complete the list of articles, without which a 'fangstbaad' should never touch the water. Nevertheless, it is usual to find that two most important items, viz. food and a compass, are missing. This is surprising, for in this region of ice and fog no one knows better than the walrus hunter when he quits his vessel's side how uncertain is the length of time which must elapse before he can climb on board again, even though he may merely, as he thinks, be going to 'pick up' a seal, lying on an ice cake a few hundred yards away.

A boat's crew consists of four or five men, and the quickness with which they can turn their boat is greatly accelerated by their method of rowing and steering. Each man rows with a pair of oars, which he can handle much better than one long one when amongst ice. The oars are hung in grummets to stout single thole-pins, so that when dropped they swing alongside, out of the way, yet ready for instant action. The steersman, called the 'hammelmand,' sits facing the bow, and guides the boat by rowing with a pair of short oars. I think this is preferable to steering either with a rudder or with a single long oar, as the whalers do, as it not only enables a crew to turn their boat almost on her own centre, but economises nearly the whole strength of one man. As there are six

thwarts in the boat the 'hammelmand' can, if necessary, instantly change his position, and row like the others.

The harpooner, who commands the boat's crew, rows from the bow thwart, near the weapons and telescope, which he alone uses. It is he who searches for game, and decides on the method of attack when it is found. 'No. 2,' generally the strongest man in the boat, is called the 'line man'; it is his duty to tend the line when a walrus is struck and to assist the harpooner, while 'stroke' and the 'hammelmand' hang back on their oars, to prevent the boat from 'overrunning' the walrus.

In such a boat, then, one lovely September morning, we are rowing easily back to the sloop, which is lying off Bird Bay, a small indentation in the east face of the northernmost point of Spitzbergen. The skin of an old he-bear, half covering the bottom of the boat, proves that we have already earned our breakfasts, but no one is in a hurry. The burnished surface of the sea is unmarked by a ripple save where broken by the lazy dip of the oars. Northwards, beyond the bold contour of North Cape, the rugged outlines of the Seven Islands stand out sharply against the blue sky; behind us the hills of the mainland, dazzling in their covering of new snow, stretch away to the south. Bird Bay and Lady Franklin's Bay are full of fast ice, which must have lain there all the summer, but the blazing sun makes it difficult to see where ice ends and water begins. Around us and to the east the sea is fairly open, except for the flat cakes of ice broken off from the fast ice, and several old sea-worn lumps, which, from their delicate blue colour (sea ice is white), we know have fallen from the glaciers of the east coast, or, perhaps, have travelled from some land, out there beyond Seven Islands, which no man has yet seen. The harpooner is balancing himself, one foot on the forward locker and one on the thwart, examining through a telescope something which appears to be a lump of dirty ice, about half a mile away. Suddenly he closes his glass and seizes the oars. 'Hvalros,' he says, and without another word

the 'hammelmand' heads the boat for the black mass which, as we rapidly approach (for no one is lazily inclined now), the mirage magnifies into the size of a small house. Now we are within a couple of hundred yards, and each man crouches in the bottom of the boat, the harpooner still in the bow, his eyes level with the combing, intently fixed upon the walrus. The 'hammelmand' alone is partly erect on his seat, only his arms moving, as he guides us from behind one lump to another. Suddenly the walrus raises his head, and we are motionless. It is intensely still, and the scraping of a piece of ice along the boat seems like the roar of a railway train passing overhead on some bridge. Down goes the head, and we glide forward again. The walrus is uneasy; again and again he raises his head and looks around with a quick motion, but we have the sun right at our back and he never notices us. At last we are within a few feet, and with a shout of 'Vœk op, gamling!' ('Wake up, old boy!'), which breaks the stillness like a shot, the harpooner is on his feet, his weapon clasped in both hands above his head. As the walrus plunges into the sea, the iron is buried in his side, and with a quick twist to prevent the head from slipping out of the same slit that it has cut in the thick hide, the handle is withdrawn and thrown into the boat. No. 2, who, with a turn round the forward thwart, has been paying out the line, now checks it, as stroke and the 'hammelmand,' facing forward, hang back on their oars to check the rush. Bumping and scraping amongst the ice, we are towed along for about five minutes, and then stop as the walrus comes to the surface to breathe. In the old days the lance would finish the business, but now it is the rifle. He is facing the boat, I sight for one of his eyes, and let him have both barrels, without much effect apparently, for away we rush for two or three minutes more, when he is up again, still facing the boat. He seems to care no more for the solid Express bullets (I am using a ·450 Holland & Holland Express) than if they were peas; but he is slow this time, and, as he turns to dive, exposes the fatal spot at the back of the head, and dies.

It does not take us long to fix the ice anchor in a suitable cake, and with the blocks and rope we drag him head-first on to the ice, and skin him. On examining his head, I find that the whole of the front part has been broken into small pieces by the first four shots, one tusk blown clean away, and the other broken. So much for shooting a walrus in the face!

Of course, the walrus does not always allow the boat to approach within harpooning distance. If it is very uneasy (which it is more likely to be in calm weather than when there is a slight breeze blowing), the beast will begin to move when the boat is, say, fifty yards distant. Then is the time for a steady wrist and a clear eye, for the creature must be shot, and shot dead, or, no matter how badly it is wounded, it will reach the water, and, dying there, sink like a stone to the bottom.

Although the walrus does not often show fight, it is not, on the whole, a rare thing for him to do so. The harpooners say that three-year-old bulls are the most liable to attack a boat, especially if it is allowed to overrun them when fast to a harpoon line. The following incident illustrates this.

One sunny night, towards the end of May, we were running for Black Point, Spitzbergen, as the skipper did not like the look of a heavy black bank of clouds which a freshening breeze was blowing up out of the south-west. Suddenly, as we were threading our way through some heavy old ice, we found that we were among the walrus, and we determined to lie aback for a few hours and take some. They were lying about in twos and threes on the ice lumps, and in a good mood to be stalked, so that we soon had the skins of three young bulls in the bottom of the boat: but the fourth, a three-year-old bull, gave trouble. He did not like the look of the boat, and a rather long shot only wounded him. After diving off the ice he rose quite close to the boat, and when the harpooner gave him the weapon, instead of making off he immediately charged. It was hand-to-hand work then: lance and axe, hakkepik and oar, thrust and slashed, struck and shoved, while the white tusks gleamed again and again through

the upper streaks of the boat; for a walrus can strike downwards, upwards, and sideways, with much greater quickness than one would imagine possible. After a while he drew off, and, slipping a cartridge into the Express (which I had emptied as soon as the struggle began), I put a bullet through his brain, and he hung dead on the line. We were lucky to escape with no more damage than a few holes in the boat and a couple of broken oars. There were many walrus around us, both on the ice and in the water, but the breeze had freshened into a gale, and snow began to fall heavily, so that we were glad to get on board again and run for shelter into Kraus Haven, a little inlet in the mossy plain which stretches from the foot of Black Point to the sea.

Few men are likely ever to forget the first occasion on which they found themselves amongst a herd of walrus in the water. Scores of fierce-looking heads—for the long tusks, small bloodshot eyes, and moustache on the upper lip (every bristle of which is as thick as a crow quill) give the walrus an expression of ferocity—gaze, perhaps in unbroken silence, from all sides upon the boat. See! the sun glints along a hundred wet backs, and they are gone. Away you row at racing speed to where experience tells you they will rise again. 'Here they are! Take that old one with the long tusks first!' A couple of quick thrusts, right and left, and away you go again, fast to two old bulls that will want a lot of attention before you can cut their tusks out. Indeed, unless one has served his apprenticeship, he had better not meddle with the harpoon at all. The old skippers and harpooners can spin many a yarn of lost crews and boats gone under the ice through a fatal moment's delay in cutting free from the diving walrus.

II. THE POLAR BEAR (*Ursus maritimus*)

As a 'sporting' animal the polar bear is, to the writer's mind, somewhat overrated; the walrus affording more exciting, and in every sense better, sport than does the bear.

Although the history of Arctic exploration and adventure contains accounts of many a death laid to its charge, yet the 'polar' makes but a poor fight against the accurately sighted breechloaders of to-day, and it is very rarely that one hears of the loss of a man in an actual encounter with a bear. And this for several reasons. Unlike the grizzly, the polar has generally to fight his man at a disadvantage. Seen first at a long distance, he commonly requires but little stalking. A boat full of men creeps along the ice edge until within shooting distance, and if when merely wounded the bear has the pluck to charge, he has not the opportunity, for his enemies are on the water, and once he leaves the ice he is completely at their mercy—no match for a man who can handle even a lance or an axe moderately well. Should a man happen to encounter a polar on land or ice, however, the brute's great size and marvellous vitality naturally make him a somewhat formidable foe, especially as the soles of his feet are covered with close-set hairs, which enable him to go on slippery ice as securely as upon *terra firma*. This characteristic of having the sole of the foot covered with hair is peculiar to *Ursus maritimus*. But even when encountered on ice, nine bears out of ten will not fight, even when they have the chance, unless badly 'cornered.' As a rule, *Ursus maritimus* is purely carnivorous, preying mostly on seals, which bask on the ice with their heads always very close to, if not actually over, the water, a habit of which the bear takes advantage in approaching to within striking distance, by dropping into the water some way to leeward and swimming noiselessly along the ice edge. Even if the seal perceives the white head, the only visible portion of the swimming bear, it probably takes it for a drifting splinter of ice, and pays no more attention to it, until a blow from the heavy forepaw of the bear ends sleep and life together. I am told that the bear manages to secure seals lying at their holes on large flat expanses of 'fast' or bay ice, but imagine that such cases are rare, as anyone who has tried to stalk a seal basking at its hole knows how extremely difficult, if not impossible, it is to

approach within rifle-shot of it. I once, however, killed a large blue seal at the fast ice edge, along whose back, from 'stem to stern,' were five parallel gashes, freshly cut through hide and blubber, marking the passage of Bruin's paw as the seal had slipped beneath it into the water. The walrus is also attacked, of course on the ice only; for in the water both walrus and seal can sport around their enemy with impunity; indeed, if the professional hunters are to be believed, the former sometimes turns the tables, and under these circumstances it is often the bear which comes off second best in the encounter.

Although carnivorous, the polar also appears to be able to exist on a vegetable diet, like other bears. Nordenskjöld observed one browsing on grass on the northern coast of Siberia (he remarks that it was probably an old bear whose tusks were much worn), and it is on record ('Encyclopædia Britannica,' ninth edition) that one was fed on bread only for some years. From its manner of life this bear is naturally almost amphibious, 'taking' the water as a matter of course, and, no doubt, frequently making long journeys by sea to regain its habitat, from which it has been carried on some drifting ice-lump. Captain Sabine found one 'swimming powerfully, forty miles from the nearest shore, and with no ice in sight to afford it rest.' No beast on the earth leads a harder life than the polar bear. Relying solely on the chase for its support, it roams continually amongst the ice. Even during the winter it does not retire from the battle of life, like its less hardy congeners, but wanders on through the storm and lasting darkness, for this species does not as a rule hibernate. It is alleged elsewhere that the female differs in this respect from the male, hibernating whilst he remains out, and the fact that all the bears (between sixty and seventy) killed in the winter months during the Austrian expedition under MM. Weyprecht and Payer were males, supports this statement; but, on the other hand, the only bears, two in number, which we killed in midwinter (on December 11 and 19, 1888), while wintering on

Danes Island (north coast of Spitzbergen), were both females, accompanied on each occasion by a cub. I think it possible, therefore, that it is only the females which are about to cast their young in the spring that lie dormant during the winter. Why the rest are roaming in the darkness, or what they find to eat in that land of death, I cannot tell ; for the seals do not lie on the ice in the dark time (at that season of the year we could not distinguish day from night), and, as has been said, the bear is no match for the seal in the water.

Even if the records of gigantic grizzlies—brutes weighing 2,000 lbs. and upwards—are trustworthy, the polar must yet be allowed to be, upon the average, the largest of his tribe. Most Londoners know the old beast in the Zoological Gardens in Regent's Park (presented by Mr. Leigh Smith), which is a good type of a big male ; and it is not too much to say that a large full-grown male bear of this species will measure from 8 ft. to 8 ft. 6 ins. from snout to tail, and weigh, probably, 1,500 lbs. The largest I have myself killed measured 8 ft. (Norwegian measurement) in length *in the flesh*, but I have seen a skin, now in the possession of Mrs. Dunsmuir, of Victoria, British Columbia, which measures 9 ft. 10 in. from the snout to root of tail. This must have belonged to an enormous bear.

The reasons why some of the expeditions after polar bear are unsuccessful have already been referred to. If the bears are sought for in the proper places, there is no reason why they may not be found and killed. Around Spitzbergen the most 'likely' places are in Stor Fjord, along the south-east and east coast (which indeed is but seldom accessible), and on the north coast east of Wiide Bay, and in the Hinlopen Straits ; the number of bear to be found in these localities depending, of course, on the state of the ice. In the spring of 1889, the south-east coast was more or less open, and the bears were so numerous that the skipper of one of a fleet of seven walrus sloops, which arrived from Norway during the last week in May, told me that he had counted upwards of twenty bears on the ice at one time, near Half-moon Island. In the same spring, one

sloop killed or captured fifty bears in the locality. When a bear is discovered on the ice by the look-out in the crow's-nest, a 'fangstbaad' is lowered, and the hunt begins. It is often but a tame affair. If one of the hunters can manage to show himself between the main body of the ice or land and his quarry, the bear will generally take to the water, when he may be pursued and dispatched at leisure, for he is not a fast swimmer, although a powerful one. The carcase of a bear, unlike that of the walrus or seal, always floats. Among rough old pack or on 'hummocky' fast ice, however, the affair assumes a more sporting turn, as the bear must then be carefully stalked amid the ice lumps, either by boat or on foot, great attention being paid to the direction of the wind; for *Ursus maritimus* is one of the keenest-scented animals in creation, and if he once winds the hunter, the chase may be abandoned unless there is a chance of driving him into the water. The chief danger of such a hunt is from the ice, which is liable to be 'working,' or which, in the case of bay ice, may be rotten in places at the season of the year when most of the hunting is done. In many cases a man should not venture on a floe or big sheet of bay ice to chase or intercept a bear without a pair of Norwegian snow-shoes and a 'hakkepik,' and should be careful also in stepping on to the ice from a boat, as the edge is often undermined by the action of the water, and will break beneath his weight, although to the eye it looks as solid as the rest of the block.

There is another phase of hunting. When the darkness of an Arctic winter has settled down on the ice fields, wrapping some ice-bound crew in its pall, then one of the few excitements which is granted to these men, left out of the light and warmth of the world, is the silent coming of some old white bear.

Early one December morning, when wintering on Danes Island, we heard bears about a mile away among the loose ice near Amsterdam Island. The men judged that the cries were made by a cub which was being punished by its mother

for not being able to keep up with her, and this proved to be the case; for before noon an old she-bear, and what seemed to be, from the tracks we afterwards saw, a three-parts-grown cub, were 'nosing' about some old seal carcases which, frozen into stony hardness, were lying a few yards distant from the snow wall surrounding the house. I crept up to them, but with an overcast sky and no moon there was not light enough for a fair aim, even at a few feet distance, so that the heavy balls from the Paradox gun struck her too far back to stop her at once, and with a low roar both she and the cub made off.

For some way along the shore there was an open space, a few feet in width, between the ice and rocks, caused by the rise and fall of the tides, and we saw the phosphorescent light flash up as the old bear struck the water in crossing it. The cub kept along the shore-line, and the skipper and myself followed his trail in deep snow until it ran on to the ice. As we retraced our steps we saw a spurt of flame apparently about a quarter of a mile away, near the Corpse Rocks; but the report of the rifle never reached us, being lost in the rending and groaning of the ice, which was grinding its way out of the Gat. This shot we found was fired by the mate, who was out on the ice after the old bear, with whom he had evidently come up, for we saw his rifle flash again and again, and had just decided to go to him, dragging our smallest boat with us, when the ice must have become jammed in the mouth of the Gat, for it began to close again. We were soon up with him, and did not stop to skin the bear, but dragged it head first over the ice to the house. The mate had found her lying down, and in twelve shots, two of which were miss-fires, had in the darkness put six bullets into her, the last of which had pierced her heart. She was in fair condition, although giving suck, but the stomach was quite empty, save for an old reindeer moccasin which one of the men had thrown away. One of my shots had almost filled the abdominal cavity with torn entrails and débris, but, with this terrible wound and a broken hind leg, the bear had fought her way for more than a quarter of a mile through loose

THE CORPSE ROCKS

ice, before lying down on the spot where the mate found her. A few hours later a south-west gale was cutting the crest off the heavy seas which were rolling where the trail we made in dragging the dead bear had been.

In conclusion, I may mention a ruse we employed during the winter months to attract any bears which might be roaming in our vicinity. A small quantity of seal blubber was kept burning and simmering in an iron pot, placed without our snow wall and replenished every few hours. Towards the end of February, two days after the re-appearance of the sun, a large old he-bear wandered about within sight, for the greater portion of two days, apparently sniffing up the fumes from our blubber pot, without daring to approach within four hundred yards of the house. At length we killed him, and after taking the skin decided to utilise the flesh, to the sparing of our blubber stock. With this idea, we filled the cavity of his chest with shavings and coal oil, and set the mass on fire. The odour of the dense black vapour which poured from the carcase may have attractions for bears, but was too pungent and powerful for human nostrils. The men were quickly of the opinion that 'bear would not eat bear,' and the following morning we were compelled to cut a hole in the ice, and commit the charred body of the last of our winter visitors to a watery grave.

CHAPTER II

THE CAUCASUS

BY CLIVE PHILLIPPS-WOLLEY

I. INTRODUCTORY

ALTHOUGH the Caucasus is within a week's journey of Charing Cross, to the average Englishman it is as little known as Alaska. As a hunting ground for big game it is infinitely less known than Central Africa. The men who have shot in Africa and written of their sport in that country may be counted by the score; but, as far as I know, up to the present moment no book has been written (except my own)[1] upon the sport of the Caucasus, and in this chapter I am obliged to rely upon my own experience and some rough notes sent me by Mr. St. George Littledale. That being so, it may well be that much has been omitted which may hereafter become common knowledge; I can only affirm that the statements made are trustworthy, as being the outcome of actual personal experience, unvarnished and undiluted.

To me the Caucasus is an enchanted land. The spell of its flower-clad steppes, of its dense dreamy forests, of its giant wall of snow peaks, fell upon me whilst I was still a boy, and will be with me all my life through. It was the first country in which I ever hunted, and it may be that I am prejudiced in its favour on that account, or it may be that I am right, that there is no country under heaven so beautiful and none in which the witchery of sport is so strong. Let my confession

[1] *Sport in the Crimea and Caucasus and Savage Svânetia.* Bentley & Son.

of prejudice be taken into consideration by all who read this chapter, and with it the verdict of my quondam companion in Svânetia: 'The Caucasus is an accursed country to hunt in, a country of ceaseless climbing and chronic starvation, in which the sport is not nearly worth the candle.' This was the honest conviction of one who is no mean sportsman, and who since his Caucasian experiences has done exceptionally well in India.

But men define sport differently. To those whose ambition it is to kill really wild game in a wild and savage country in which they will get but little help from any but their own right hands, to them I say, try the high solitudes round Elbruz and the ironstone ridges of Svânetia.

The best time for sport in the mountains is the end of June, July, August, and the first week in September, after which another month may be spent profitably hunting bear and boar in the chestnut forests on the Black Sea; for aurochs the hunter should be in the sylvan labyrinths at the head of the Kuban in August.

Taking London as your point of departure, you can reach the Caucasus by four different routes: either by Paris, Marseilles, and thence by one of the boats of the Messageries Maritimes (running once a fortnight) *viâ* Constantinople to Batoum; or by Calais, Cologne, Vienna and Odessa, to Batoum; or by the Oriental Express *viâ* Paris and Constantinople; or by Wilson's line of boats from Hull to St. Petersburg, and thence by rail *viâ* Moscow and Voroneze to Vladikavkaz.

The first route takes about eleven days, and costs about 16*l.* 16*s.*; the second takes (roughly) nine days, and costs about 20*l.* The third route is, I believe, the quickest and most expensive, but I have not tried it.

My own favourite route is the fourth, by adopting which you gain the advantage of a quiet and untroubled journey, with few vexatious changes, only one custom-house (and that with a consul-general at hand to help you through), and the possibility of alighting from the train within a drive of the outskirts of

your hunting ground. The cost of the journey from London to Vladikavkaz by this route is about (including food, &c.) 20*l.*, or as much more as you like to make it. From St. Petersburg to the Don the level lands of Russia glide by your carriage window unbroken by a single hill—I had almost said by a single tree. After Voroneze you enter the steppe country proper, a sea of flowers in spring, a perfect hell of dust, or mud, or wind, for all the rest of the year. From Voroneze these steppes roll right up to the foot of the main chain of the Caucasus, and standing on the plains near Naltchik you may see at a *coup d'œil* some hundreds of versts of snow-capped mountains rising like a sheer wall drawn from the north-east to the south-west of the peninsula. These snow-capped mountains and the 'black hills' (as the natives call the densely wooded foot-hills) constitute the principal game preserve of the country, and resemble, in their appearance and in the varieties of game with which they abound, the hill country of India, to such an extent that an old friend of mine, whose happiest days had been spent in shikar in the Himalayas, used to allege that all the game beasts found in the Caucasus were mere varieties of the Indian fauna.

Before dealing with the different districts and the game found in each, a few general hints to the traveller may not come amiss.

The Caucasus is the arena of the hardest fight Russia ever fought, and, having partially depopulated the country, she still holds it by force of arms. That being so, the more unpretentious a traveller is, the better is his chance of passing unquestioned about the country. Strong introductions from home and from the Foreign Office are more likely to hamper than to help, and if you want leave to go to any little travelled district, the best way is to take it. If you ask for it you are likely to be refused, but if you go in quietly, with a small outfit, and devote yourself exclusively to hunting, no one is likely to interfere with you.

The best outfit in the Caucasus is that which comes nearest to the hunter's beau ideal, i.e. as much as he can carry

himself. This of course, like all ideals, is unattainable, but you may come very close to it; and as there are many places in which, when in pursuit of mountain game, you cannot use horses, your baggage must be such as one, or at most two, men can pack in a bad place. Now a man should pack 50 lbs., and if your means are unlimited, your baggage need only be limited by the number of men you can persuade to accompany you; but the more men you have with you the less work you will get done per man, as the chief luxury of the Caucasian is gossip, and with a crowd of followers the temptation to loaf and talk would prove irresistible.

Two men, one as a guide and gillie, and one to leave in camp (both of them taking their share of packing whenever camp is moved), should be sufficient for anyone. Of course, where it is practicable, ponies should be used, as with them a greater weight can be packed, and packed too more expeditiously, than with men; and in most cases it will be found easy enough to take pack ponies to establish your main camp, proceeding from that on foot for short expeditions of three or four days. It is as well to remember that 200 lbs. is a good load for a pony in rough country, more, probably, than he could carry on most of the Caucasian trails, and from 50 lbs. to 60 lbs. quite enough for a man, although I have known one of my own men carry nearly double that weight during an ordinary day's tramp, arriving at camp towards sundown brimful of spirits and devilment. I remember that when his load was off he stood on his head, and 'larked' about with the other fellows to relieve his exuberance of vitality. A *tente d'abri*, to weigh about 15 lbs., is the best tent for Caucasian travel, because it is the lightest and handiest to carry. My old tent used to weigh about 20 lbs., and this with an express rifle (about 10 lbs.), cartridges, field glasses, a revolver and a few sundries, used to constitute my own 'pack.'[1]

When travelling with Caucasian porters and hunters it is as

[1] The revolver was a useless encumbrance, and the tent can be made many pounds lighter.—C. P.-W.

well to treat them as comrades and not as servants. Although they work for hire, they do not understand the relation of master and servant, and, though perfectly ready to help you when you need help, expect you to help yourself when you can, whilst in all matters of food and camp comfort they expect to share and share alike with the head of the expedition. May I digress here for a moment to say that this is one of the most important secrets of travel? Never allow yourself any luxuries in a 'tight place' which your men have no share in. If you have only one pipeful of tobacco, when provisions are short, share it with your men, and in the Caucasus at any rate you will not lose your reward. It is a good many years ago now, but the memory of one chilly night among the mountains is with me still, when I woke at 3 A.M. to find myself warm and snug under two extra bourkas (native blankets). The owners of the blankets were squatting on their hams, almost *in* the fire, and talking to pass the long cold hours until dawn. Having rated them for their folly and made them take back their blankets and turn in, I rolled over and slept again. When I next woke—it was 7 A.M. (shamefully late for camp)—the men were still crouching over the embers, helping to cook breakfast, their bourkas having been replaced upon my shoulders. I had paid those men off *the day before* this happened, and they left me next morning with a hearty 'God be with you,' utterly unconscious that they had done anything more than the proper thing towards their employer and companion who, 'poor devil, could not sleep unless he was warm, and became ill if he did not get a meal every day in the week.'

A sleeping bag such as Alpine Club men use would be an excellent substitute for blankets, and with that, a pipeful of tobacco, a little bread and bacon and a small flask of whiskey, any reasonably keen and hearty sportsman should be able to hold out for a few nights among the mountain-tops in August. Indeed, if this is too much hardship for the would-be ibex hunter, he had better give up ibex hunting.

In all the best districts for mountain game round Elbruz

the traveller will find smoke-blackened lairs amongst the rocks, and round beds amongst the fallen pine needles at the base of

Waiting for the dawn

some great tree just on the timber limit. In these, for generations, the ibex hunters of Svânetia have rested from their labours and waited for the dawn.

As to general camp outfit, any light outfit for a hunter's camp in a temperate region (e.g. Europe or North America) will suffice; extreme portability being the principal thing to aim at, as the trails are infamously bad in the best game districts.

Eschewing luxuries, let the hunter take with him all the flour he can carry, as round Elbruz and in all the best mountain districts the only flour obtainable is of villanous quality, and the bread made from it will damage the most cast-iron digestion.

As to foot-gear, English hobnailed boots may do excellently well for mountaineers, and may be the best possible things on ice. I would as soon wear rings on my fingers and bells on my toes as attempt to hunt in boots. For still hunting of any kind, whether in the mountains or in the forest, moccasins of some sort are essential, whether they be soled with india-rubber like tennis shoes, or simply soled with a double sole of deer's hide, like those used in North America. For the 'tender foot' old tennis shoes are excellent things, but a pair per diem would not be too much to allow for ibex shooting in the Caucasus, the rocks cutting any foot-gear to pieces in the shortest possible time.

The native moccasin is the best after all: a sock of deer skin or some other soft tanned hide, made large and loose, with a split down the middle of the sole from toe to heel, which is laced up with raw hide laces, the laces running across and across each other thus XXXX. The moccasin is stuffed with fine mountain grass, and is then put on damp and tightly laced. By these means a comfortable fit is ensured, the tender hollow beneath the instep is protected from sharp rocks, and a firm grip in slippery places is given by the kind of network made by the laces. In boots a man has no chance of using his toes to cling with; even to bend his foot is beyond his powers, and a boot once worn out cannot be repaired in camp, whereas a moccasin may be patched until none of the original article remains.

A sling for your rifle is a necessity in all mountain shooting;

so, too, is an alpenstock, which should *never* be shod with metal, the ring of which against the rocks would proclaim your approach half a mile away. Choose a good stout pole of some hard wood for yourself; harden it (and especially the point) in the fire, and test it carefully before using it, as it may have to carry your weight in awkward places.

Wages in the Caucasus vary according to the amount of travel in the district. If the sportsman is unfortunate enough to run across a district in which foreign tourists are common, the charges made for men and horses will be excessive, but in remote districts, off the main lines of travel, you could (in 1888) hire a man and his horse for 5*s*. a day, and a porter to carry your food and blankets in the mountains at 1*s*. a day.

In 1882 I travelled and shot for three months in the Caucasus with a friend. During the whole of that period I carried the money-bags, and at the end of the trip, I believe that I was able to return a little small change to my companion out of the 100*l*. with which he had entrusted me, as his share of our joint purse. Out of our 200*l*. I paid railway fares, hotel bills, and all camp expenses; and it is only fair to add that when in a town the best room in the best hotel, and its best bottle of wine, was only just good enough for us. Luckily, we spent very little time in towns.

Those days, I am afraid, have already passed away, but two roubles a day should still be ample pay for any of the men who accompany a shooting party, and less than that would probably be taken gratefully. The chief difficulty of the Caucasus as a shooting ground for Englishmen lies in the language of the country, which varies in every district. Either Russian or Georgian would probably be sufficient to carry a man through the whole country between the Black Sea and the Caspian, as he would generally find some one who spoke one or other of these tongues in every village he entered, and even if now and again he came to a hamlet where no one could understand his speech, the ordinary Caucasian is wonderfully apt at the language of signs.

An interpreter can be hired at Tiflis or Kutais, but he will be more trouble than a valet and more fastidious, besides doubling the expense of the expedition and causing constant trouble with your men. There may, of course, be good interpreters; if so, I have been unfortunate in never meeting any. My last word of advice shall be, try to do without them, pick up a little Russian for yourself, and then trust to luck and good temper to pull you through.[1]

II. NORTH-WEST CAUCASUS.

The Caucasus includes not only the great range which gives its name to the isthmus, but also a district as large as France, bounded on the north by Russia, on the east by the Caspian, on the south by Armenia and Persia, and on the west by the Black Sea and the Azov.

In any similar area you would expect to find districts varying considerably in their fauna, but in the Caucasus the districts to the north and south of the chain vary to such an extent, that the naturalist Eichwald speaks of the 'tall peaks of Caucasus,' as putting the most distinct limits to the fauna of Asia and Europe.

The northern side of the chain, from what is called the Manitch depression to the foot-hills of the main chain, is simply a continuation of the steppes of Russia, a land without trees, and, until you get near the foot-hills, devoid of all game except feathered game and wolves.

To the north-west of the mountains, the great game district is that which lies along the banks of the Kuban, a river rising in the main chain near Elbruz, and flowing thence due north for a space, after which it turns sharply westward, and flows parallel to the main chain, finally emptying itself into the Black

[1] To deal exhaustively with all subjects connected with mountain hunting, in the Caucasus or elsewhere, would be to repeat much which has already been written by experts in the Mountaineering volume of this series. Rather than do this, I strongly recommend anyone who meditates a hunt in Alpine regions to procure that volume and read it carefully.—C. P.-W.

Sea. On its road from Elbruz to the sea it receives the waters of every stream which drains to the north-west of the chain; and it is here, between the Kuban and the mountains, and upon the banks and head waters of the Kuban's tributaries, that the hunting grounds of Northern Caucasus are to be found.

Going east from Taman along the line of the Kuban, the country is broken up by huge beds of a tall reed called kamish by the natives (*Arundo phragmites* of the naturalists), which grows to such a height as to hide a man riding through it. In places these reed beds stretch for miles, and through them the Kuban runs, a dull sluggish flood, more like a great canal than a mountain-born river.

Its banks of black mud, however, are interesting enough to the sportsman, written over as they are with the 'sign' of the beasts which find safe harbour in the adjoining jungles.

Of these beasts the commonest is the wild boar, an animal which I believe grows to larger proportions, and exists in greater numbers, in the Caucasus than anywhere else on earth. A pair of tusks, the tracings of which are before me now (the originals being in the possession of Colonel Veerubof, Governor of Naltchik), measure round the outside edge 11½ ins. and 11¼ ins. respectively.

Like the European wild boar, the Caucasian beast is of a blackish-grey colour, covered with a long coat of stiff bristles, which he erects along his spine when irritated, making him appear some inches taller than he really is. Professor Radde, of the Tiflis Museum, has been kind enough to supply me with the following particulars. 'The largest solitary boars,' he says, 'measured at the shoulder and measured straight, stand about 105 centimeters, and their total weight not dressed rarely exceeds 15 puds (600 lbs.).' These are undoubtedly big beasts, but in the chestnut forests of Circassia, and in the reed beds of the Kuban, there are such rich feeding grounds that in them even a 600-lb. boar seems possible. In India, I suppose, to shoot a boar is as vile a crime as vulpecide in Leicestershire, but, except on the plains of Kabardah, there is no place

in the Caucasus where the boar could be hunted on horseback, and even there the hunting would be but a very short scurry at early dawn from the maize fields to the foot-hills, the shelter of which once gained, the quarry would be absolutely safe from any mounted enemy.

Enormous as their numbers are, wild boars would be even more numerous between the Black Sea and the Caspian, were it not for their nocturnal raids on the maize fields of the natives, most of whom, being Mahommedans, only hunt the marauders in self-defence, not deigning to so much as touch them when dead. The Cossacks, of course, have no such scruples about pork, and the principal object left in life to the old scouts ('plastouns'), who were wont to keep the Kuban red with Tcherkess blood, is the pursuit of the boar.

In the great reed beds in which they used to lurk waiting until the men of some native 'aoul' went out to harvest, that they might give the village to sword and flame, these same scouts wander to-day, grey as the boars they hunt, rough, savage, and uncouth as their quarry, wounded probably in a score of places, but silent-footed, enduring, and as well acquainted with every game path in the reeds as the very beasts which made them. These are the men to obtain for guides if you can get them, but beware of paying them a single kopeck as long as there is a cabak (whisky shop) within a day's march of you. As a rule the plastoun shoots his game at night, waiting by some wallow or by the side of some swine path leading to water or fruit trees, until he hears a rustling among the reeds, sounding strangely loud in the moonlit August night, and growing nearer and nearer until between the watcher and the skyline comes a great dark bulk. Round the muzzle of his old musket the plastoun ties a white string with a large knot in it, where the foresight should be, and aiming low into the middle of the dark mass, pulls his trigger when the boar is almost on the muzzle of his rifle. My first experience of boar shooting was connected with such a shot as this; but on that occasion the victory rested with the boar. Through a long summer

night I waited for my gillie to come back from his vigil by the Kuban, and at dawn he came, four men carrying him. He had wounded the old grey beast on a narrow path through the kamish, and had lain still while the boar gnashed his teeth and glared about for his foe. But the tall reeds hid the hunter, and the boar turning retraced his steps, leaving a broad blood trail as he went. Until the grey dawn the Tcherkess waited, and then, confident that he would find his enemy cold and stiff not far away, he got up and followed the tracks. Before he

The boar's charge

had gone far, there was a crash among the reeds behind him, followed by a fierce rush along the trail, and as he turned to face his foe, the keen white tusks ripped him from knee to thigh-joint and across and across his stomach, until his bowels rushed out and he lay across the pathway nearer death than the boar.

When his companions found him he had still life enough left to tell the story, and an examination of the scene of the encounter proved the extraordinary cunning of the wounded boar, who, failing to 'locate' his enemy when first struck, had retraced his own steps along the trail, had entered the reeds at

a point higher up and on the opposite side to that from which the shot had come, and, returning by a line parallel to the trail, had lain in hiding opposite to the ambush of the hunter.

Only once in eighteen years' wanderings have I seen anything to match this in cunning, and as it was in the same neighbourhood, I may be allowed to allude to it here.

In the Red Forest, near Ekaterinodar, the wood is cut up into square versts, divided by rides. The snow had fallen, and in one of these squares old Colonel Rubashevsky, the forester, showed me where a pack of wolves had surrounded a small band of roe deer, having taken up positions along the four sides of the square, from which, on some preconcerted signal, they appeared to have converged simultaneously upon the centre where the deer lay. They had surprised in this manner four or five roe deer, whose remains we found. But to return to the boar. If anyone should care to hunt this beast specially, the best plan to ensure success is to sit up for him at night when the pears round some Cossack settlement are fresh fallen. or else to hunt him with a small pack of hounds. Half a dozen curs will suffice, and with these, in the chestnut forests on the Black Sea, or in the lovely pheasant-haunted woods near Lenkoran, very good sport may be obtained, for not only will the boar, shifting rapidly from holt to holt in an almost impervious tangle of thorns, tax the endurance of the hunter to the utmost, but should that hunter be tempted to take a snap shot at the black quarters and crisply curling tail of which he gets a glimpse as it vanishes into dense covert, it is a thousand to ten that the next thing which he sees will be the other end of the gallant beast coming straight for him at something less than a hundred miles an hour. There is no beast alive for whose uncalculating courage I have so much admiration as I have for the boar's. I have seen him scatter a pack of hounds nearly as big as mastiffs (they were mongrel harlequins) and go straight for the hunter. I have seen a sow with her back broken trying to worry with her teeth a hound nearly as big as herself, and fighting till death stiffened her

muscles, and I have also seen an old boar, with a bullet in his neck, trying for my wind like a pointer trying for birds, and as angry as a drunken Irishman who can find no one to fight with. Luckily, he gave me a broadside shot at him before he had discovered my whereabouts.

As to a locality suited for hunting boar, it is hard to choose in the Caucasus. Wild swine swarm on the coast of the Caspian; they are the road-makers and chief denizens of the kamish jungles on the Kuban; they abound in all the scrub oak districts among the foot-hills, but perhaps they are most numerous where Circe tended her herds of old, on the wooded slopes near the Phasis, between Sukhoum and Poti. Like most beasts, they are more or less nocturnal in their habits, coming out to feed on the peasants' crops, wild fruit, oak-mast, chestnuts, or the roots of the common bracken at dusk, and retiring during the day to the densest thorn thickets, where neither sun nor man can molest them, and where the thick black mud is most moist and dank.

A smoothbore (No. 12), with a round bullet in it, is the handiest weapon for shooting wild boar over hounds, as with it you can make better practice snap shooting in the dense jungle than you could possibly hope to make with a rifle.[1]

But the kamish beds and the foot-hills hold nobler beasts of chase even than the wild boar. Besides the tracks of the roe and the wild swine, the hunter's eye will be gladdened now and again by the big track of the ollèn, although the proper habitat of this noble beast is in the foot-hills and the lower ridges of the main chain.

The ollèn is the red deer of the Caucasus, and is found from the Red Forest ('Krasnoe Lais'), near Ekaterinodar on the Kuban, to the snows on the mountains of Daghestan. Naturalists may be able to detect some points of difference between this deer and the red deer of Europe and the wapiti of

[1] This was written before the author had had experience of the Paradox, the best of all weapons for bush shooting.—C. P.-W.

the New World. To the ordinary hunter he is the same beast, only that in size he more nearly resembles the great stag of America than our Scotch red deer.

Mr. St. George Littledale puts the ollèn midway in size between the bara singh of Cashmere and the wapiti, whilst Dr. Radde, curator of the Tiflis Museum, maintains that the quality of their food makes the only difference (a difference merely of size) between the wapiti, bara singh, ollèn and red deer. When I hunted the ollèn I had no notion that I should ever be called upon to carefully discriminate between them and their kin in other countries, so that I am obliged to rely upon my memory for any points of difference, and memory only suggests that whereas the wapiti rarely (if ever) has 'cups' on his antlers, the ollèn royal has the peculiar cup formation as often as the red deer. Again, the call of the Caucasian stag in the rutting season (September) is similar to that of the Scotch stag, and does not resemble the weird whistle of the wapiti. In size both of body and antler the ollèn comes very near to the great American stag. The dimensions of four heads, obtained by Mr. Littledale at one stalk, will give a very fair idea of the average size of ollèn heads, and a glance at the illustration taken from a photograph of this gentleman's bag for 1887 will convey an idea of the general character of ollèn heads as well as of the sporting capabilities of the Caucasus. In this photograph, to make it a complete record of his year, Mr. Littledale should have included trophies of boar and bear which also fell to his rifle.

On the day upon which Littledale's four heads were obtained, this fortunate sportsman, lying on a ridge near the summit of the divide, looked down at one *coup d'œil* upon a dozen old male tûr in an unstalkable position, two bears whose skins (it being in August) were not worth having, a chamois scorned as small game, and the stags which he ultimately bagged.

The following are the dimensions of three of the four heads referred to; the fourth, a 12-point head, had some of the

MR. ST. G. LITTLEDALE'S CAUCASIAN BAG FOR THE SEASON OF 1887

velvet still clinging to it in shreds, and the dimensions I see are not given.

	Points	Girth of beam	Length of brow antler	Length from skull to tip along the curve of antler
(1)	14	6¾ inches	20 inches	44½ inches
(2)	13	7 „	16¼ „	46½ „
(3)	13	7¼ „	13½ „	48 „

Compare these measurements with those of the biggest wapiti exhibited at the American Exhibition of 1887, belonging to Mr. Frank Cooper, of which the length along the curve was 62½ ins., the girth of the beam 8 ins., and the number of points 16, and it will be seen that, given as large a number of *picked* Caucasian heads to choose from as there were picked American heads in England in 1887, the probability is that the ollèn would not be very much surpassed by the wapiti.

Like the latter, the ollèn is daily growing scarcer. In Mingrelia, before the Russian conquest of that province, this grand red deer abounded, and for some time after that date the Russian peddlers did quite a lively trade in antlers, which they obtained by the cartload for a mere song from the natives. But ill-blood arose between the Russian officers and the native princes, which led to a wholesale slaughter of the ollèn, so that to-day it is comparatively scarce in its old haunts, although on the head-waters of the Kuban and its tributaries, and in Daghestan (where the natives call it 'maral'), the ollèn still exists in sufficient numbers to satisfy any honest hunter. The worst characteristic of the beast is that, as a general rule, he is as fond of timber as a wapiti in Oregon.

The Caucasian ollèn has his antlers clean from about the middle of August, and his rutting season is (in the mountain regions near Naltchik) about the middle of September.

The only other deer in the Caucasus is the roe (*Cervus capreolus*), a pretty graceful little beast, which is plentiful on the Black Sea coast, amongst the foot-hills, and forms the

principal item in the bag made at the big drives in the Imperial and other preserves of the district. The sharp bark of these little bucks, as they bound away unseen from some thicket above you, or a glimpse of a group of roes standing as still as statues, dappled with the shadows of the foliage above them, are incidents in most days' still hunting in Circassia.

In the Crimea, round Theodosia and Yalta, men may hunt specially for roe, as there is no larger game (except, they say, a few red deer near Yalta), but in the Caucasus he is only looked upon as useful for filling up the void in one's larder.

After all, in big game hunting half the charm lies in the mystery of the dark silent forests and the mist-hidden mountain peaks. Once well away from the haunts of men, you are in a land of romance, and if you do not actually believe in the eternal bird who broods upon Elbruz, at the sound of whose voice the forest songsters become dumb, and the beasts tremble in their lairs; if you don't believe, as the natives do, that the tempests are raised by the flapping of her hoary wings; if you scout the camp-fire stories of the tiny race seen riding at night upon the grey steppe hares; you have still some superstitions of your own—you look for some wonder from every fresh ridge you climb, in every dim forest that you enter. In America it is the hope of a 2,000-lb. grizzly or a 20-in. ram which buoys up the hunter; on the head-waters of the Kuban, on the Zelentchuk, on the Urup, on the Laba, and especially upon the Bielaia river beyond Maikop, in the least known and most unfathomable wooded ravines from which the Kuban draws his waters, it is the rumour of a great beast, called zubre by the natives, which draws the hunter on.

If the zubre differs at all from the aurochs,[1] he is the only beast left, now that Mr. Littledale has slain the *Ovis poli*, of which no specimen has fallen to an Englishman's rifle.

That a beast nearly allied to the great bull of Bielowicza does exist, and in considerable numbers, in the districts in-

[1] Since this was written Mr. St. G. Littledale has killed the aurochs as he killed the *Ovis poli*.

dicated, there can be no doubt. A fine is imposed by the Russian Government upon anyone who slays a zubre, and this in itself goes a long way to prove the beast's existence; but there is better evidence than this. In 1879 I knew of two which were killed as they came at night to help themselves in winter to a peasant's haystack, and in 1866 a young zubre was caught alive on the Zelentchuk and sent to the Zoological Gardens of Moscow, where the savants decided that he was identical with the aurochs of Bielowicza. Unfortunately the chance of adding the head of a zubre to the sportsman's collection is becoming more and more remote, as, in addition to the law protecting the beast, the districts in which he is most common are now included in a preserve set apart for the sons of the Grand Duke, who formerly ruled at Tiflis.

III. SOUTHERN SLOPES OF THE CAUCASUS

The black hills and the pine forests on the northern side of the chain are the favourite haunts of the red deer and the aurochs, as the reedy bed of the Kuban is the favourite home of the boar and the pheasant; but though bears are found on the northern slopes in fair numbers, occurring sometimes even above the snow-line, the true home of Michael Michaelovitch (as the peasants call him) is on the sunny slopes of the southern side of the chain, as for instance in the great wild fruit districts of Radcha, between the Kodor and the Ingur, or in the sweet-chestnut forests and deserted orchards of Circassia.

The change from one side of the main chain to the other is as marked to-day as ancient legend made it. It is a change from a northern land of storm and mist and pine forest to a land of tropical luxuriance, of rank vegetation, of enervating sunshine. Vines and clematis, and that accursed thorny creeper which the Russians call 'wolf's-tooth,' form impenetrable veils between the trees, while huge flowering weeds, thickets of rhododendron and azalea, and jungles of the

umbelliferous angelica pour down dew upon you in the morning until every rag of your clothing is soaked through, or later on in the day impede your progress and render every footstep noisy.

Through all this wild tangle of forest growth run the brown bears' paths. Down below are tracts of wild currant bushes; in the gullies made by the mountain brooks are patches of raspberry canes, and leading to them, from the cool lairs higher up (which he affects at noontide), are the broad pathways down which the lazy old gourmand half walks, half toboggans, just as the sun goes down, when you can hardly tell the outline of his clumsy bulk from the other great silent shadows which people the gloaming.

The natives of Radcha and the mountain forests to the north-west of that province, having but little arable land, clear small patches in the forests and grow crops of oats amongst the charred stumps. These are the places in which to wait for Bruin at night, and earn the thanks of your neighbours, as well as the brown coat of the old thief himself. I well remember once in Radcha, when the moonlight was so bright that I could read a letter by it, waiting with my Tcherkess until it grew so late that we gave up all hope of a bear that night. Suddenly a bough snapped in the forest above us, and within ten minutes a great brown shadow was biting at a bullet hole near its shoulder, after which it galloped off into the rim of gloom which hedged in our little oat-field. Within half an hour from that time the field seemed full of bears, four or five of which we could distinguish plainly, their backs moving about slowly just above the level of the crop, and all of them as silent as spectres. We got a bear every night we stopped at that camp, and left feeling sorry for the local agriculturists.

Amongst the chestnuts and old orchards between Tuapsè and Sukhoum bears are as numerous as in Radcha, and I have frequently seen half a dozen in a day's still hunting. Being undisturbed, they feed or wander almost all day long through the still, shady forests, and though early morning and evening

are the best times to look for them, the man who with moccasined feet will 'loaf' slowly upward, standing still from time to time to listen and to watch, will rarely go half a day without a shot, at any rate in late autumn.

Still hunting in October is the best way of obtaining game in the forests by the Black Sea; but later on in December, when the berries are over, the fruit rotten and the chestnuts eaten, the bears 'house up' (or hibernate), and the only chance of getting any sport at all is with hounds; even then pigs and roe deer will be your only quarry, and nine times out of ten you will waste your day hunting wild cats or jackals, your pack appearing to prefer these beasts to nobler game.

The common bear of the Caucasus is a small brown bear, like, but not as large as, his cousin of Russia, although I have once killed a young specimen (full grown, but with teeth unworn) as light in colour and as large as the ordinary Russian bear. As a rule the Caucasian bear is an inoffensive brute, but, like all his race, he will every now and then turn upon his assailants. I said above 'the *common* bear' of the Caucasus, and I said it advisedly; for, although I am aware that I may meet with contradiction from high authorities, I am myself firmly persuaded that there is another variety of bear found, for the most part in the highlands of Central Caucasus about Radcha, Svânetia, and on the uplands of Ossetia, and the head-waters of the Baksan, Tchegem and Tscherek, tributaries of the Terek.

It may well be that these bears occur elsewhere in the isthmus, but I have never seen them or their skins in the lowlands by the Black Sea. The highland bear of the Caucasus, whose tracks I have found over and over again among the snow and ice far above timber level, is called 'Mouravitchka' (the 'little ant-eater') by the natives, who allege that he is as savage as the common bear is pacific; that he preys upon the flocks and herds, which the ordinary bear never does; that he is much smaller and more active than his fruit-eating cousin of the lowlands, and that his skin is greyish in colour, with a broad white collar round the neck. The coat altogether re-

minds one rather of the Syrian bear than of any other variety of the tribe.

Unfortunately, I have never killed one of these bears myself. Every man who has shot bears anywhere knows that it is a good deal a matter of chance whether you meet one or not, and with this particular kind of bear chance has been against me; but I have found their tracks above the snow-line; and I have had exactly the same story repeated to me year after year in different villages by the natives. On the Balkar pastures in 1888 the herdsmen told me that they had suffered very severe loss from this beast's depredations, and sold me a fresh skin of a bear of this kind which they had slain on one of the high passes between Svânetia and Balkaria, after putting eleven bullets into him. I have seen some dozens of skins, among them those of bears in every stage from cubhood to toothless old age, and in all the marking was like the marking of the skin I bought in Balkaria, a coat of silvery grey with a broad pure white collar round the neck.

The coats of bears, I know, vary enormously. I have in my own library at this moment skins of the same variety which differ in hue, from a brown which is nearly black to a pale straw colour; but amongst them all the Caucasian mountain bear's skin looks distinct. The native hunters all believe as firmly in the existence of two distinct varieties of bear in their mountains as Western trappers believe in the grizzly as distinct from the black bear; and I agree with and believe in the hunters.

In a Western camp the tales told at night are invariably of the 'grizzly.' He is the devil of the mountains. In the Caucasus and in Russia it is otherwise.

The Russian peasant makes Mishka (a pet name for the bear) the comic character of his stories. The 'bogey' of the woods on the Black Sea coast is the 'barse,' of whom all sorts of terrible yarns are spun. Most of them, I fear, are lies. In nine cases out of ten the barse is merely a lynx, of which there are very many all along the coast, and in the foot-hills

on the southern slope of the Caucasus. Now and again, as you come home late with your hounds, you may be lucky enough to tree one, but you don't see them often. The tenth time the barse may really be what he is supposed to be, a leopard, but whether this leopard is *Felis pardus* or *Felis panthera*, I don't know.

Professor Radde mentions both in his list of Caucasian mammals. All the skins of barse which I have ever seen were similar to the leopard skins of India and Persia, on the borders of which country, near Lenkoran, the Caucasian barse is most common.

In spite of the stories told in his honour, I am inclined to think the Caucasian leopard as great a cur as the panther of the States, which he resembles a good deal in his habits. My own experience of the beast is, however, limited. In a district which I used to hunt a certain barse had his regular beat, appearing even to have a particular day of each week allotted to each little district in his domains. One moonlight night I was obliged to sleep by myself in a ruined château, once the property of General Williameenof, standing where the shore and the forest met. The old Caucasian fighter had made no use of the land given him by a grateful government, so the roof had come off the château, the trees had climbed in through the empty frames of the great low windows, and I flushed a woodcock in the nettles which grew on the hearth.

At midnight I woke, the moonbeams and the shadows of the boughs making quaint traceries on floor and ceiling, whilst underneath the window, a barse was expressing his earnest desire to taste the flesh of an Englishman, in cries in which a baby's wail and a wolf's howl were about equally represented.

The brush was too thick for me to be able to get a shot at my visitor that night (though I got a shot on a subsequent occasion), and though I wandered about among the trees looking for him, and went to sleep again lulled by his serenade, he never dared to attack me. Hence I fancy that the Caucasian bogey is as harmless as other bogeys.

Everything on the southern slope of the Caucasus warns you that you have left Europe behind you. It is not only the jackals' chorus at sundown, or the antelopes' white sterns bobbing away over the skyline, but now and again a report comes in that somewhere down by the Caspian a man has killed or been killed by the tiger.

I have even seen the tracks of 'Master Stripes' myself, and sat up for nights over what a native said was his 'kill,' not very far from Lenkoran.

Still tigers are too scarce to take rank amongst the great game of the Caucasus.

IV. PLAINS OF THE CAUCASUS

I have said that the Caucasus is divided by nature into several distinct districts: the plains of the North, the deep forests of the Black Sea coast, the great wild region at the top of the 'divide,' and the arid eastern steppes, deserts such as Kariâs and the Mooghan.

Each district has its typical game. On the barren lands outside Tiflis, where nothing will flourish without irrigation, except perhaps brigandage, and on the great wastes through which the Kûr and the Araxes run, there is a short period, between the stormy misery of winter and the parching heat of summer, when the steppe is green with grass and dotted with the flocks of the nomad Tartars.

Later on the sun burns up everything; the Tartars move off to some upland pastures, and the natives of the steppes have the steppes all to themselves. These natives are the wolf, the wild dog, and two kinds of antelope, not to mention the turatch, a sand grouse as fleet-footed as an old cock pheasant and as hard to flush as a French partridge. The two antelopes are *Gazella gutturosa* and *Antilope saiga*, of which the former is by far the most plentiful; indeed, in stating that *A. saiga* is found at all in the Caucasus, I am relying upon the authority of a Russian author (Kolenati), upon whose authority, too, I have enumerated the

wild dog (*Canis karagan*) as among the denizens of the steppe.

Wolves, djerân (*Gazella gutturosa*) and turatch I saw daily in 1878, when I crossed the steppes from Tiflis to Lenkoran, before the Poti-Tiflis line had been extended to Baku. The saiga antelope, unless misrepresented in drawings and badly stuffed in museums, is an ill-shaped beast, with a head as ugly as a moose's, the 'mouffle' being, like that of the moose, abnormally large and malformed. But the djerân is a very different creature, built in Nature's finest mould, with annulated, lyre-shaped horns, coat of a bright bay with white rump, of which the hunter sees more than enough, always on the skyline, receding as the rifle approaches.

A gutturosa

In the young djerân the face is beautifully marked in black and tan and white, but the old lords of the herd get white from muzzle to brow. The illustration is from a photograph of a full-grown young buck shot at Kariâs.

There are many beasts in the world which are hard to approach. It is not easy to creep up to a stand of curlew, or to induce a wood-pigeon to get out of your side of a beech-tree: it is fairly hopeless to try to stalk chamois from below when they have once seen you—but all these feats are easy compared to the stalking of djerân on the steppes of Kariâs.

Nature has given the pretty beasts every sense necessary for their safe keeping, and, like wise creatures, they generally stay together in herds, so as to have the benefit of united

intelligence, some one or other of the herd being always on the look-out while the rest are feeding. They do not appear to want water often, as no one ever tries to waylay them at their watering places (indeed, I never met anyone who knew where they went to drink), and the country they live in is flatter than the proverbial pancake, and as smooth as a billiard-table. There is hardly a tree in the whole of it ; not a reasonably sized bush in a mile of it ; I almost doubt if there is a tuft of grass big enough to hold a lark's nest in an acre of it. I remember once finding cover behind a bed of thistles on Kariás, and the incident is indelibly fixed upon my memory, I suppose, by the rarity of such comparatively rank vegetation in that country. Add to this scarcity of cover the fact that a floating population of shepherds, Tartars and outlaws from Tiflis, hunt the djerân incessantly, and it is easy to imagine that a shot at anything less than 500 yards is difficult to obtain. The Tartars have a method of their own for circumventing these shy beasts. Knowing that under ordinary circumstances even the long-haired Tcherkess greyhound would have no chance of pulling down *G. gutturosa*, the dog's master manages so to handicap the antelope that the greyhound can sometimes win in the race for life. Choosing a day after a thunderstorm, when the light earth of the steppe will cake and cling to the feet, half a dozen Tartars ride out on to the steppe, each with his hound in front of him on his saddle. Having found a herd of antelope, the hunters ride quietly in their direction. Long experience has taught the antelope that at from 500 to 1,000 yards there is no danger to be apprehended either from man or horse, so that for a little while the herd fronts round, calmly staring at the intruders, and then quietly trots away, turning again ere long to have another look. From the moment the herd is first found the Tartars give it no rest, nor do they hurry its movements unduly, but are content to keep it moving at a slow trot, not fast enough to shake the caked mud off the delicate legs and feet of their quarry. In this way they gradually weary the poor beasts (who seldom have wit enough to gallop clean

out of sight at once), and then, as the weaker ones begin to lag behind, the Tartar's time comes, and, slipping his great hound, man and dog rush in upon the tired creatures. The antelope of course is half beaten before the race begins, whereas the dog is fresh and would at any time get over the sticky soil better than the antelope ; so that, thanks to this and to the aid of other hounds and men who head the devoted beast at every turn, one djerân at any rate is pretty sure to reward the Tartars for their pains. To us this always seemed unfair to the antelope, besides which we had neither hounds nor horses at Kariâs, so that we had to resort to stalking pure and simple.

Long before the dawn we used to rise, and, with some local Tartar for our guide, steal out silently across the level lands. Arrived at what our guide considered a favourable spot, we would lie down and wait for dawn. As the morning approached, the cold increased ; then the sky grew lighter, and the mists began to roll off the plain. By-and-bye a long string of laden camels, which must have started from camp by starlight, would appear upon the horizon, and then the sun came up and it was day. The Tartar's idea was that when the sun rolled up the mist-curtain for the first act, a band of antelope would be seen feeding within rifle-shot ; but, as a matter of fact, we only used to see those antelopes as usual making their exit over the sky-line. One of the two I killed I shot at over 400 yards, going from me, and the other was found feeding behind what I think must have been the only ant-heap in Kariâs. As I had spent some days going as the serpent goes in a vain endeavour to approach a djerân unseen, I found no difficulty in stalking this comparatively confiding beast. On the Mooghan steppe the djerân is less hunted than at Kariâs ; there is more cover, and the game is less shy. It may be worthy of remark that, having tasted game flesh of many kinds, including bear in America and Russia, deer of all sorts from Spitzbergen to Elbruz, white whale and a score of other questionable delicacies, I consider that there is no meat which I have ever tasted to be at all compared with that of *G. gutturosa*.

CHAPTER III

MOUNTAIN GAME OF THE CAUCASUS

BY CLIVE PHILLIPPS-WOLLEY

WILD and beautiful as they are in their way, it is not in the deep mountain gorges at the head of the Kuban, nor in its vast reed beds, neither is it in the rich forests of Circassia, or the dreary steppes of the Mooghan, that the true spirit of the Caucasus dwells, and the finest sport of the country makes slaves of natives and aliens alike.

Round the Mamisson Pass, in the wild and beetling precipices of Svânetia, wherever nature is most cruel and most forbidding, lives a race of men to whom, not only luxury, but every ordinary comfort of the most primitive forms of civilisation, is unknown.

Stronger tribes than theirs drove them, in the dark ages, from the rich plains below into the mist-hidden fastnesses in which they now dwell.

Their villages are perched at heights varying from 6,000 to 9,000 feet; their *pastures* are such dizzy slopes as lowlanders would hesitate to climb; their harvests travel down to the villages in rough log toboggans, the impetus afforded them by their own weight and the precipitous nature of their descent being their only motive power; while the houses in which the natives crouch for shelter from the bitter blast are mere irregular cairns of grey stone, without windows, smoke-blackened, unfurnished, unmorticed even, and lit only by a flaring pine knot carried uphill from the nearest straggling group of stunted trees. A Russian writer says of these men that 'as children they learn the lessons of life from the lammer-

'STANDING LIKE STATUES'

geiers wheeling round their mountain-tops, until robbery and the chase become for them all that makes life worth living.'

It is to their hunting-grounds that a true sportsman's eyes will always turn from plain or forest ; to the region of desolate ironstone peaks by the snow-line and above it, where, amidst the chaos of an unfinished world, the tûr and the ibex, the chamois and the mountain goat, share the solitudes with the vultures and the Ossetes or Lesghians.

If the truest sport is that into which most dangers and most hardships enter ; in which the odds are longest in favour of the quarry and against the hunter ; in which the sportsman hunts for the love of the chase alone and not as a pot-hunter, still less for any reward of 'filthy lucre,' then is the ragged Ossete a prince amongst sportsmen. Unless Nature has given a man a good head, the mere sight of the Ossete's hunting-ground is enough to turn him dizzy.

Starting at midnight from Teeb, or Tlee, or any other of those grim but shattered citadels of the mountain-men in the Valley of the Mamisson, you may climb until the stars fade and the dawn comes, and then, having started at a height close on 9,00c feet above sea-level, you will reach the ragged ironstone crags amongst which your game lives, just half an hour too late, although since the moment you started you have had but one short breathing space, and have plodded bravely on in the steps of thc lean grey hunter who is your guide, by a track which seems to lead as persistently upwards as the flight of a skylark.

It is almost impossible to give any adequate idea of the weird desolation which surrounds the home of the Ossete and the tûr. At Alaghir, a village of the plains, some seventy-three versts from the summit of the Mamisson, there are good houses and orchards and many of the comforts of life. A few miles from Alaghir the road enters a gorge full of the fumes of sulphur, the stream becomes a milky blue, the road grows steeper and steeper, hour after hour vegetation becomes more beggarly, until at last there is no timber on the side of the

gorge, only half of which gets the light of the sun at any one time; the features of man and of nature are pinched as if by the cold and misery; everything is hard and grey, and the chill of the glaciers seems to have got hold of the very heart of life.

In old days the Caucasian mountaineer had two pursuits open to him—brigandage and the chase. The shattered keeps, which no one has troubled to repair, tell the story of the first of these.

Russian cannon has knocked the eyries of the mountaineers to pieces, and cut short their career as warriors. It is for sport alone that the best of them still live, and their one sport is the chase of mountain game.

With a skin of sour milk over his shoulder, and a few thin cakes in his bashlik (hood), the Ossete will disappear for days and days among the crags which overhang his miserable home. To him the ironstone rocks are as familiar as Piccadilly to a Londoner, and wherever dark or the mountain mists may catch him, he knows of some lair under a boulder where he and his predecessors have passed many a night before. After two or three days of lonely hunting, the man comes back, if empty-handed, uncomplaining; if successful, just as silent and undemonstrative as the stones he lies down amongst. By a custom of his country, the very game he kills is not his own, but must be given to his fellows, his own share being but the massive horns, which he hides away among the blackened rafters of his hovel, or hangs on a post before the door of his tiny church.

There are, as far as I know, four varieties of mountain game between the Black Sea and the Caspian, but the country has been but very superficially explored by sportsmen, and the reports of naturalists who base their theories upon the stories of the natives are not worth much.

On the lower ridges, and on the high grassy shoulders of Svânetia, and elsewhere, chamois abound, identical in all respects with the common chamois of Switzerland and the Tyrol. Being less hunted than the European variety, the

Caucasian chamois is generally found fairly low down, just above timber limit, or in summer round the lower edges of the glaciers. There is seldom a day in the mountains when the hunter will not hear that long whistle so strangely human in its note, and, turning, find that he has been detected by the mountain sentinel. In Svânetia I have seen chamois in large herds (one herd which I remember numbered at least fifty head), and every 'sakli' has its crevices or its roof adorned with the little black horns.

But the tûr is the mountain beast, *par excellence*, of the Caucasus. The chamois is looked upon as comparatively small game.

'Tûr' is a native name, and is applied to several different beasts indiscriminately.

When a Svàn, or an Ossete, or any man, native or Russian, talks to you of tûr in the main chain between Kazbek and Elbruz, he means either Caucasian ibex or Caucasian burrhel.

Of the two in Svânetia the ibex is the commoner beast, while, judging by the horns found in the saklis, the burrhel is commoner in the Mamisson district. I have, however, seen the burrhel in Svânetia, and any intelligent native hunter will tell you that there are two kinds of tûr in his country, one with notched and one with smooth horns. There are now specimens of both in the Natural History Museum at Kensington, and any one who will take the trouble to compare them will find abundant points of difference, though their general similarity of appearance is enough to account for the confusion which exists among native hunters. The burrhel (*Capra pallasi* or *cylindricornis*) stands about 3 feet high at the shoulder (a big ram would stand higher), and measures from shoulder to rump about 3 inches more than that. His horns are something like the Indian burrhel's, not being indented, and turning out laterally before bending back. The coat of the burrhel is hard and deer-like, in colour closely resembling that of the ibex, both beasts being furnished by nature with coats of reddish brown to match the ironstone rocks amongst which they live. In the ibex (*Capra*

caucasica) the colour and the size vary very little from the colour and size of the burrhel, but the horns are true ibex horns, curving back at once from the head towards the quarters, and deeply indented. A glance at Mr. Littledale's trophies of 1888 will give an idea of the head of *C. caucasica*, while the little sketches of horns in my possession and of the head in the Kensington Museum will illustrate the difference between *C. cylindricornis* and *C. caucasica*. Before dealing with the hunting of any of these mountain beasts, all of which live in the same kind of country and are hunted in the same way, let me describe the fourth variety to which I have alluded.

C. cylindricornis and *C. caucasica* are found in Central Caucasus, and from personal knowledge I know that the former, *C. cylindricornis* or *pallasi*, is found also in Daghestan; but it is only in Daghestan and the neighbouring mountains, and I believe in Ararat, that that splendid wild goat, *Hircus ægagrus*, is to be found.

Unfortunately Ararat is an impossible country for the sportsman, as a gentleman named Kareim was in 1886, and perhaps still is, actively engaged in the native industry of brigandage; and, moreover, what few natives there are in the mountains are perpetually at war with one another, in consequence of which the Russian officials will not permit sportsmen, with or without an escort, to wander about Ararat. In Daghestan, in 1878, there were also brigands, and, if you believed the resident Russians, some of those with whom I associated were distinctly no better than they ought to have been; but to me they were the kindest of hosts, and in the part of Daghestan in which I shot, life was absolutely luxurious compared with the life in the villages of Central Caucasus, and, indeed, quite as comfortable as any healthy man need desire. The whole population is composed of shepherds and hunters; the half of their flocks being of goats, so like *Hircus ægagrus* in type that the suspicion that he himself was but a tame goat 'gone wild' would force itself upon one. The reverse of this may be the truth; but undoubtedly there are among the herds which the little Lesghians

IBEX

(Hircus Ægagrus)

drive up to the mountain pastures every morning many old he-goats which it would be hard to distinguish from those so well set up at Kensington, or those others which I saw wild in the mountains about the Christmas of 1878.

Hircus ægagrus is somewhat smaller in size and lighter in build than either *C. caucasica* or *C. pallasi.* He is a rich creamy brown in colour, with a dark stripe along the spine and what a saddler would call a 'breast-plate' of the same colour, and dark knees and dark markings on the legs. The beast described and figured as *Capra ægagrus* by Mr. Sclater in the Proceedings of the Zoological Society for May 1886 seems to me to represent the animal in question.

There are three ways at least in which the mountain game of the Caucasus may be hunted. First, there is the royal method practised by the Prince of Mingrelia, who was good enough to invite me to participate in a mountain drive with him in 1887. This gentleman owns a large tract of country between Kutais and Svânetia, in which tûr and chamois are preserved. Once a year the Prince and his friends assemble their retainers, of whom every Caucasian chieftain keeps and feeds a vast number; and, having stationed the guns in the passes and runways of the mountains, the beaters drive the tûr and chamois past the guns. On one occasion I am informed that a bag of forty tûr was thus made in one day's driving. To those who prefer grouse driving to walking up the wild old birds later on in the season, this may be fine sport. For my own part I don't consider it so. But it is a mere matter of opinion. Then there is a second method which appeals strongly to those who care to watch Nature and her wild things closely, when they are most off their guard. This is the shepherd's way. Wherever there are tûr, there are what the natives call springs of bitter water, in some cases mere yellow licks on almost inaccessible crags, in others big springs of water very strongly impregnated with iron. The natives are extremely fond of this water, believing that it cures all ailments and endows a man with every physical virtue, and the mountain goats

are as fond of it as the men. Wherever there is such a spring or lick, the tûr will, if possible, come down to it at least once in every twenty-four hours, and the shepherds, knowing this, lie in wait for their coming. All day long, at any rate during the warm months of the year (June, July, and August), the tûr keep well up in the crags above the snow-line, where neither man nor insects nor the broiling heat of a Caucasian sun can annoy them. But as night begins to approach, the listening hunter will hear the rattling of stones upon the moraines above the glacier. The tûr are coming down to the little patches of upland pasture to feed. By-and-bye he may catch sight of them as one by one they come slowly on to a knife-like ridge of rock looking down upon the patch of sweet grass below. But they are in no hurry, and the probability is that they will stand there like statues, gazing into the gulf below, for what seems to the watcher to be half a day, and really is half an hour, while the chill mist wraps him round, numbing him with cold and gradually hiding his game from his sight. Later on, if he has crawled up to his eyrie opposite the bitter-water spring, where he has just room to curl himself up on a ledge overhanging a hideously dark profound, he may watch the moon sail up over the peaks, and towards morning he may hear again that rattling of falling stones displaced by unseen feet. Peer as he will into the silvery mists on the other side of the ravine, he can see nothing; but the falling stones continue to set his heart beating, and at last he hears that shrill bleat from which the tûr gets its local name, djik-vee. Straining his eyes to the utmost as cry after cry comes from the 'lick,' he at last makes out shadowy forms moving like flies across the face of the sheer rock opposite, and, praying to his patron saint, he startles the solemn night with the sharp ring of his rifle. In nine cases out of ten, if he kills anything it will be a ewe or a young ram at best; for, though the young rams and the ewes go in large herds, the old beasts keep themselves apart, retiring, so say the natives, to inaccessible fastnesses above the snow-line, and not coming down until later on in the

season. This is to some extent corroborated by a note of Mr. Littledale's to the effect that in 1886 he found the old rams in a certain remote district on the south side of the chain, 13,000 feet and more above sea-level.

But the only true way to hunt ibex is to follow them to their own haunts, and if they *will* go high up, then must you gohigher. There is but one top to a mountain, even tûr cannot get above that; and the man who, having got to the crest of the ridge, has the hardihood to sleep there (no great hardship if he has a sleeping bag with him) is pretty sure of success, even with *Capra cylindricornis*. The first rule in hunting mountain game is, that if you want to get near them you must hunt them from above. A few hawks, an occasional eagle, and the great snow-partridge are the only living things which share the mountain peaks with the tûr, and from these they have nothing to fear. But watch them before they lie down for their midday *siesta*, and you will see how they stand and stare from their dizzy resting-place down on to the lower slopes of the mountain; notice, too, how the old solitary rams choose their beds on some narrow ledge commanding every possible approach from the lowlands. They know that man, their one enemy, lives below them, and it is for him that they are incessantly on the watch. The smoke of a camp fire on the edge of the pine forest in Svânetia, if seen, as it probably will be by some of the sentinels of the mountain herds, is sufficient to scare every beast from that side the ridge for days; for, remote as his haunts are, the tûr has been hunted by the natives for generations, and is alive to every move in the hunter's game. But from above the tûr expects no danger, and is therefore comparatively easy to approach, always provided that no eddying gust of wind brings the scent of man to his keen nostrils. If this happens the hunter's next view of him will be on a sky-line which it would take human feet a couple of hours to reach, and the direct road to which appears impossible for anything without wings. There is only one sense in which the tûr is inferior to the lowland beasts, and that is in his hearing. A

broken twig will disturb half a forest; but stones may go rattling away from under your feet, making a noise like volley-firing, and the tûr will hardly turn their heads. Presumably stone slides and the fall of single detached rocks from natural causes are so common that the ibex become indifferent to the noise.

Having then found a country, about the end of August, in which tûr are said to be plentiful, make your permanent camp just inside the edge of the forest where a tiny stream trickles from the glacier through the pine-trees. It is ten to one that, if the country chosen is really a good one for game, you will find traces of an old camp near at hand, if it be but a smooth round nest among the fallen pine-needles.

Leave your supplies and a man to look after them here, and see that the man left behind understands that if he shows himself outside the forest, or goes hunting on his own account, he will forfeit his pay.

If you can persuade a Caucasian to submit to such a thing, it would be safer to leave your man without firearms, and therefore out of the reach of all temptation to wander. As this is difficult to do, I always prefer to simply 'cache' my supplies and leave them unguarded. Even if they should happen to be found by some wandering Tcherkess, they will not be touched. The supplies having been cared for and a central camp established, take a sleeping bag for yourself (your man very likely will not even trouble to take his bourka with him if it is only for a couple of nights), as many flat cakes of bread as you can manage to pack, some cooked meat in the most portable form you can devise, an extra pair of moccasins, and a suit of flannel for night. This last item takes up very little room, and is worth more than all the whisky you could carry.

Let your clothes be of good stout tweed, as near the colour of the rocks as possible. Wear knickerbocker breeches, made very loose at the knee, so as not to stop your stride uphill, and get from your man a pair of the stout felt gaiters which he himself wears, to save your shins from the sharp edges of the rocks.

I find that a spare bourka (native blanket) and a tanned skin are useful things to take into camp with your other stores, for making and repairing gaiters and moccasins. A pair of loose-fitting deer-skin gloves, with (at any rate in September) another pair of woollen gloves inside them, are generally worn by the native hunters, and are almost a necessity. Even with two new pairs of gloves to protect them, I came home, after my last twenty-four hours in the ironstone rocks of Ossetia, with my palms badly cut and bleeding. However, that was an exceptionally rough twenty-four hours in an exceptionally rough bit of country, even for the Caucasus. Add to the above outfit an alpenstock (the point fire-hardened, *not* iron-shod), your rifle, with a sling to carry it over your shoulders, your stalking glass and your cartridges, with a small coil of rope, a compass, matches, tobacco, a knife for skinning, and any other small luxuries which you feel inclined to 'pack' on your own shoulders, or which your man *offers* to carry. Don't let him have a rifle if you can help it. A Caucasian is as keen after game as a terrier after rats, and if he has a rifle it is quite on the cards that at the critical moment he may think your movements too slow, outpace you in getting to your game, or even fire over your shoulder.

I have had this happen once in my life, at the end of a long day of hard work, and think I know now what is the utmost which a man can be called upon to endure at the hands of his fellow-man.

Equipped as suggested, a man should be able to stay on the top of the ridge for three or four days, and in that time it is hard indeed if he cannot get a shot, at fairly close range, at a really good 'head.' In such quarters as he will have to sleep in, there is no fear that the hunter will lie abed too long; but it is worth remembering that ibex, especially, are somewhat nocturnal in their habits, and that as soon as ever it is light you should be on some point of vantage from which you can see your game returning from their feeding grounds to lie down for the day. An old tûr, when he has once settled himself for

his *siesta*, is very hard to distinguish from the red rocks amongst which he lies, and even when you have found one or more of the really big fellows the probability is that they will be lying in some spot to which it is impossible to approach unseen.

By sleeping, as suggested, at the top of your ground, or near it, you avoid the necessity of rising at midnight: of forcing your way in the dark through thickets of tall weeds, which soak you with rain or dew; you are sure of being at your look-out station in time; you can examine several faces of the range at once, and choose that on which you see game in the most approachable position; you begin your day's work fairly fresh, instead of being dead beaten by a stiff climb before dawn; you get a chance of stalking your game from the only point from which it can be stalked with any reasonable hope of success, and all at the price of a somewhat uncomfortable and chilly night's rest.

There is one other point worth noticing before I tell the story of a day's stalk as illustrating tûr-hunting generally, and my last point is this: Having fired your shot, lie still until you know certainly what the result of it has been. If you have missed, you may, if you do not show yourself, get a second shot, and this is especially the case with mountain beasts like the tûr, which do not seem to 'locate' sound as accurately or quickly as lowland beasts.

If the animals fired at move off at a run, wait a few moments before firing again, and you will be rewarded by seeing them pull up and stand at least once more before they are out of range. Unless you are a very first-class performer, one chance at standing game is worth a dozen at game 'on the jump.' Again, in any case lie still at first, for if your beast is wounded he may either lie down before going very far, or even come towards you if he has not seen you. I have had a brown bear blunder almost over me when wounded, and that not because he meant mischief, but because he had not seen me and did not know where the shot came from. Even when badly scared,

game will sometimes stop for a second in full flight if the unseen hunter gives a shrill whistle. But once a tûr, unhit or wounded, has discovered the hunter, nothing will induce him to stop travelling for the next quarter of an hour, and no beasts which I know will take so much lead with them (*uphill* even) as rams generally, and more especially Caucasian rams.

Having elsewhere published the story of most of my own best days amongst the tûr, I have drawn upon some notes of Mr. Littledale (the most successful hunter, I verily believe, who ever carried a rifle between the Black Sea and the Caspian) for a story illustrative of tûr shooting, and have told it almost in his own words.

Being camped at the extreme limit to which it was possible to take horses, even with half-loads, and having his wife in camp with him, Mr. Littledale was obliged to rise every day by starlight and do half a day's work before getting to his shooting grounds. In order to lighten the work for his hunters, he had sent them on to a spot higher up, some four hours' walk from camp, there to await his coming every morning.

The interpreter he had with him was an untrustworthy sort of fellow, and the camp was full of half-wild natives, good enough men in their way, but as troublesome and mischievous as boys. This state of affairs in the main camp made it essential that, instead of sleeping where he shot, Littledale should return to camp every evening.

On the first day he rose at 2 A.M., and, guided by a native over some extremely bad going, reached the hunters' camp by 6 A.M. Here Littledale left his guide and went on with the hunters, who were up and ready for him.

That first day Littledale saw a band of tûr feeding on a slope above his party, but as the day grew older the band made for the crags, and, in spite of all the hunters' efforts, reached their regular haunt on an inaccessible ledge and lay down there. An attempt to get at them by making a wide détour only resulted in moving the game, although the hint of man's proximity conveyed to them by some eddy of wind was not

sufficiently strong to make them move far or fast. However, it was enough to render any further attempt useless that day; so that, after making another détour and killing a chamois on his road home, Littledale reached his camp and turned in by 8 P.M. Next morning he and his guide were delayed at starting by the mountain mists, which hid everything, so that they did not reach the hunters' camp until 6.30 A.M. Going at once to the spot at which they had seen the túr the day before, they hunted high and low without success, and then took a line along a ridge, which they stuck to until it grew so steep and dangerous that the guides showed signs of striking and Littledale had to give the order for 'home.' On their way back the party saw their old friends the tûr far away below them, with such a yawning gulf between them and the hunters as to render any attempt to reach them that day absolutely hopeless. That night Littledale reached camp at 9 P.M., and at 2 A.M. next day was again on foot. But on this third day the túr were not upon their usual ground, and, weary with incessant early rising, hard work and hope deferred, the hunters gave way for a time to disappointment. But honest hard work generally gets its reward, if there is only enough of it, and as Littledale's glass swept slowly over the crags and snow-fields round the point on which he lay, luck turned, and lo! there was the herd not half a mile away in a place where they could apparently be stalked with ease, whilst even the wind for once was in the right direction.

At first all went well; too well, Littledale thought. Experience had taught him that such luck could not last. Nor did it. When the stalk seemed almost at an end and success assured, he came to a sheet of snow at least 100 yards in width, set between him and the tûr, and within full view of the latter.

In vain he sought for a way round, or for some covert, however small, behind which there would be some chance of crawling across; but it was no use, there was absolutely no way for him except across that glaring white patch in full view of his game. It seemed, after all his hard work, too cruelly tantalising even for that sport of which the Russian says that

it is 'harder than slavery'; but, unfortunately, there was no help for it, so there the hunters lay, the game almost within range of them, and yet hopelessly inaccessible. As they lay silently watching, the heat which exercise had generated in their bodies slowly oozed away, the wind began to twist and shift dangerously, so that at any moment they might expect to have their presence betrayed, and down below the mist-wreaths began to gather. All at once one of these detached itself from the rest and came floating up towards the peaks. Nearer and nearer it crept up the mountain-side, until, to Littledale's inexpressible delight, it rested for one moment upon that odious snow-patch.

That was all that was wanted, and in a moment Littledale and his companions had taken advantage of it, had flitted like ghosts through the shifting veil before it had time to pass on, and had thrown themselves, with a sigh of thankfulness, behind a huge boulder on the other side of the snow-field. They were only just in time, for as they gained their shelter the little mist floated off the snow, and the tûr, which were still above the party, began to show unmistakable signs of uneasiness.

From the boulder Littledale tried to worm himself still nearer to his quarry, but as he did so, first one and then the whole herd got slowly up, one big fellow standing, broadside on, upon a little pinnacle above the rest. Putting up the 150 yards sight, and taking the foresight very fine, as the shot was uphill, Littledale pressed the trigger, and the great ram sprang from the rock with a stagger which looked as if he had got his death-wound.

As the first beast left it, another big ram took his place upon the rock, and as the left barrel rang out he too vanished on the other side of the rock.

Uncertain as to the result of his shots, Littledale hurried to the spot, to find one tûr *in extremis* and the other gone.

However, the hunter, following at his leisure, pointed out the second beast, dead, within ten or fifteen yards of the first. The fact that Mr. Littledale (no novice, mind you) overlooked

the second dead beast, although so close to him, gives some idea of the way in which a tûr's rusty hide matches his surroundings.

But the game was not bagged yet, although Littledale had settled down to skin one beast, and the hunter was preparing to skin the other.

In turning his ram over, on the steep incline upon which it lay, the hunter lost control of it, and, in spite of his efforts, the dead beast broke away from him, rolling over and over at first, and then going in great bounds down the mountain until it lay on a snow-bank several thousand feet below, upon which it appeared, even through the field-glass, a mere speck. This misfortune complicated matters, and in order to save both heads, Littledale was obliged to let both hunters go down to the fallen tûr and pass the night alongside of it, whilst he was left to find his way back to camp alone. This generally sounds much easier than it is, and so Littledale found it upon this occasion. As evening approaches, the mists begin to sail about among the crags; first like great ostrich plumes, and then growing larger and more dense, until they make the smooth places difficult and the difficult places impossible. I have myself a very vivid memory to this day of a certain rock to which I had to cling for half an hour until one of these mist-wreaths floated away, leaving me almost too stiff and tired to climb down, and far too tired to climb up any higher, though a wounded ibex was above me. As for Littledale, upon this occasion he put his best foot forward and made all the speed he could to get off the ridge, and on to better going. For hours he had to grope his way along a precipitous ridge, in dense fog, throwing small stones down either side from time to time to tell by the sound whether he was still upon the main ridge or not. Only now and again did a gleam of sunshine break through the mist, and in a few hours the sun would set.

It was a horrible position for a lonely man, uncertain where his camp lay and tired with three days' hard work; but Littledale's cup was not yet full.

THE SPECTRE

The Caucasians, like all mountaineers, are full of superstitions. Gods and devils haunt their mountains now as they did when the ancients only knew them as a part of misty Turan, the home of storm and evil, or at least the mountain men so believe. And what wonder? As Littledale stopped to scrape together a few more fragments with which to sound the abysses on either side of him, he noticed with a shudder a huge figure crouching in the mist beside him. As he sprang to his feet the awful shape reared up, and small blame to a level-headed and cool man if he did not remember, until his express was pressing against his shoulder, that there was such a thing as the spectre of the Brocken, and that this huge shape which followed and mimicked his every action was, after all, only his own shadow in the clouds.

It was long after this that, lying at the top of a ravine which had taken him an hour and a half to climb, he struck a light to find a few more pebbles and get a drink, and found as he bent down his own track of that morning.

He says the sight of it made him feel years younger, and those who have been in such tight places and found their way out of them will know the feeling; but it was 10 P.M. when he got back to his camp, and here are the last words in his notes: 'Reached home a little after ten, had some food in bed, and registered a vow that I had done my last solitary scramble in the Caucasus.'

I have registered that vow many times, when cold, and starving, and dead tired, with hands and feet bleeding, and no massive 'head' to compensate me for my toil; but I have never kept my vow, and I venture to doubt whether my much more successful fellow-sportsman will keep his.

The great peaks are sorcerers whose spells no man may resist, and the feeling that every manly quality in you has been tried to the utmost, and has borne the strain, is worth more than all the cruel toil endured.

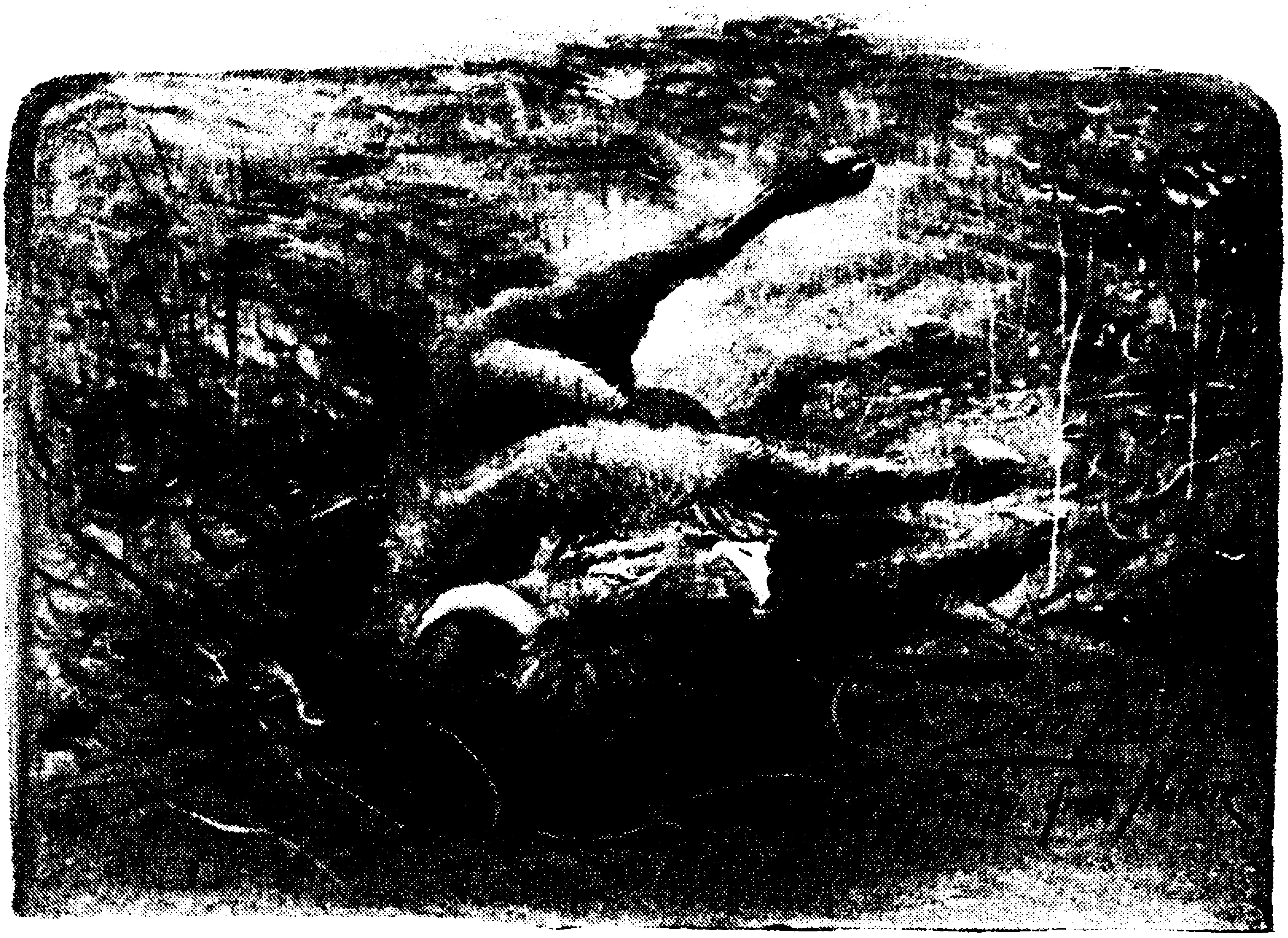
In conclusion let me say that there is so much confusion as to the correct classification of the Caucasian goats, that before

venturing to publish this contribution I went for information to the British Museum, considering that the nomenclature used by that Museum should be the standard for British sportsmen. At the Museum I learned that on this particular subject even our savants are in some doubt, whilst in Russia the leading naturalists of St. Petersburg and Moscow disagree. However, Mr. Thomas courteously supplied me with the following definitions, which may be sufficient for present purposes.

Capra cylindricornis, or *pallasi*, is the name properly applied to the Caucasian burrhel, a beast with smooth cylindrical horns ; *C. caucasica* is applied to the Caucasian ibex, a beast with horns recurved and modulated as in the true ibex ; while *C. ægagrus* is an animal with horns of the common goat type, with sharp front edges *irregularly* modulated. The best horn measurements of these three beasts known to me are :

	Length	Circumference
C. cylindricornis	$38\frac{1}{4}$ inches	$12\frac{1}{2}$ inches
	36 ,,	15 ,,
C. caucasica	$40\frac{1}{8}$,,	$12\frac{5}{8}$,,
C. ægagrus	$48\frac{1}{4}$,,	$8\frac{3}{8}$,,

These measurements have been kindly supplied by Mr. Rowland Ward from his notebook.



Dead aurochs

CHAPTER IV

CAUCASIAN AUROCHS

BY ST. G. LITTLEDALE

BOS BONASUS is the scientific name for the aurochs, the great ox that roamed in bygone ages over the whole of Europe: its remains are found in Spain and Great Britain on the west. How far east it ranged I cannot say, but when on the Upper Irtish in Siberia, close to the Mongolian frontier, I obtained a skull which had been dug up from the river bank. Like the American bison, it has been driven from the low ground forests and open plains, and has tried to find refuge in a secluded mountain range; and thanks to the inaccessibility and impenetrable nature of its chosen retreat it is still to be found, though in very limited numbers, in as wild and savage a state as it was in the days of Cæsar. In the forest district of Bialowicza in

Lithuania, belonging to the Emperor of Russia, there are a number of them living under very efficient protection ; but the Caucasus is the only place where they are still found absolutely wild. On my first visit to the Caucasus in 1887, the natives told me about the aurochs, and, fired with the idea, I made several attempts to get one ; but we were too late in the year, and were, so our guides informed us, in imminent danger of being snowed up in the mountains, so we had to leave without my ever seeing a fresh track. Mrs. Littledale and I returned the following year, and for three months not a week passed without my making two or three excursions after the aurochs. We were camped just about the timber-line at an elevation of (approximately) 6,000 feet, and we only found their track in the densely timbered valleys below. There were no means of getting our camp pitched lower down, for the valleys were quite impassable for horses, and even if possible it would have been questionable policy, as such extremely shy and retiring animals would certainly not have remained within a feasible distance of our tents. The only way we got into the country at all was by following up a ridge : when the ridge ceased to be practicable then we had to stop. In the early morning I used to descend into the timber, sometimes trying the higher ground, on other days the lower ; and I frequently crossed the valley and up the other side, which entailed a descent of about 3,000 feet, a similar ascent up the corresponding side, and the whole thing over again on returning to camp. We rarely saw a fresh track. The aurochs seemed to love a level piece of ground, perhaps because when the ground was level there was always a swamp with facilities for wallowing, or because, being originally a plain animal, some latent hereditary instinct made them feel more at home there than on the steep hill-side. But whenever we were able through an opening of the trees to look down and see a level spot, we used to make straight for it, because we found from experience that if there were any of the animals near at hand we should find traces of them there, and if there were no tracks then it was almost useless spending any more

time in that neighbourhood. I had with me Tcherkess hunters —we had not a Russian in the party that trip—and they worked very hard to get me a shot at a dombey, the Tcherkess name for the aurochs. We found places where they had stripped the bark off rowan trees, both the bark and berries evidently being a favourite food, and where they had grazed on the bracken one afternoon we thought we heard some below us.

The wind being right, we lay down for a couple of hours in the hope that they might come towards us. Presently we heard the snapping of twigs getting nearer and nearer. I made myself a little peep-hole through the bracken and cocked the rifle; about sixty yards off I saw some young fir-trees sway about as an animal forced its way through, and there stood before me, not the aurochs I had hoped for, but a young stag. He sauntered past within forty yards without getting our wind, and we then crept in the direction where we imagined the aurochs were, for the hunters were positive it was not the stag they had heard. The two men were barefooted and I wore tennis shoes, but the bracken was dead, and with all our care it was impossible to go through it without making some little noise. Suddenly there was a disturbance as of an omnibus crashing through the branches, but we saw nothing; and that was the nearest I got to an aurochs on that expedition. The same weary plodding through dense timber brush and bracken, and every evening the same story, a tired frame and a clean rifle, was continued week after week till the natives told us that unless we wished to leave our baggage behind we must get out of the mountains.

The autumn of 1891 saw Mrs. Littledale and myself back in the Caucasus, and on our arrival we immediately inquired for our old hunter. He had embraced and kissed me fervently on both cheeks at parting, and we looked forward to seeing that fine old man again. He had snow-white hair, but his springy walk and keen eye made me hope that I too, at his age, might still be able to toddle along with a rifle after big game. But he had gone, emigrated with some

thousands of his tribe to Turkey. The best of our new hunters was a Lesghian, who spent most of his life in the mountains, and it would have been better for him if he had spent it all there, for he only came down to the settlements to get vodky, and there he would remain till his last rouble had vanished.

We had occasion to pass through a village in changing our shooting ground, and once in the village it took us three clear days to get our Russian followers out of it; baking bread, buying sheep, changing ponies, all in turn were pleaded. At last we were ready, but the Lesghian did not show. When he arrived he was ridiculously drunk; his drunkenness taking the form of excessive politeness. If either Mrs. Littledale or I spoke to him, off went his cap and he bowed nearly to the ground. Near the village we crossed a river with some difficulty; directly he saw us well started in the water, back he doubled for the village. I recrossed at once and captured him. I thought it would keep him out of mischief if he led a baggage pony. He objected, pointing out that he was over forty, and that one of the Russians was a younger man, who ought to lead the pony. I shook my head, and said he was much too young to be trusted, but that, as I was over forty too, I arranged that he and I should lead the pony alternate versts.

I agreed, at his earnest desire, to let him have my alpenstock when he had not the pony; if he said he was tired and sat down I said it was the very thing I was dying to do; when he wished to carry my field glasses I took a fancy to pack his rifle, and so the farce went on; Mrs. Littledale was in fits of laughter at us. But he was worth the trouble, and knew more about the habits of the game than all the rest of them put together. Before we camped that night he was himself again, and he had no other opportunity of breaking out; once or twice he expressed a wish to go down to look after his bees, and we appealed to his feelings by telling him he was the only trustworthy person in camp, and that Mrs. Littledale would not feel safe were he to leave. Little presents of tea and quinine

kept him contented till we broke up our party. As an instance of a curious custom in the Caucasus, I relate the following circumstances. I had had bad luck in losing a wounded beast or two, and the Lesghian told me the rifle wanted washing. I let him look through the barrels, which were bright as silver, for never under any circumstance do I go to sleep without first cleaning my rifle. He said it looked clean, but it wanted washing. After wounding and losing a stag, the Lesghian insisted on returning to camp. He said I might fire at all the animals in the whole Caucasus, but until my rifle was washed we should get nothing. To humour the man we retraced our steps, and I asked him to cure the rifle; he said we must wait till the morning, and then get water from different streams before any animal had drunk, or man had washed in it. The Russian hunters were equally confident of the necessity, so the following day they brought water from three different springs, carefully boiled it, and then washed out the rifle with the hot water. Whether it was owing to their fetish, or to my having substituted solid for hollow bullets, I express no opinion, though the hunters were less modest, but from that time forth I lost no more wounded beasts.

Early one August morning, with my two best hunters, I made another attempt after zubr (this being the Russian name for aurochs). We struck right down into the timber, making for a mineral spring, where we hoped to find tracks. On our way we passed and examined another small spring and found nothing fresh, but on reaching the lower spring we came on the track of a bull that had drunk there the previous evening. We followed his trail as quickly and silently as we could. The tracks showed that he had gone up the hill and had been browsing about there, and we found a comfortable bed which he had scraped out for himself in the pine needles, under a big pine with low spreading branches. We now redoubled our precaution; the head hunter went first, tracking; I, with the other man carrying the rifle, kept a sharp look-out ahead. Several hours passed, and we were still steadily creeping

through dense pine woods, when the aurochs dashed out of a thicket, and down a watercourse, barely allowing us a glimpse; but soon I saw about a hundred yards off, ascending the other bank, a great ungainly brown beast. There he was at last—'everything comes to him who waits.' What struck me most during the moment that I was bringing the rifle up was not his size, but the extreme shortness between his knee and fetlock. Bang, bang, went the double Express, the first bullet catching him through the ribs, as he was sideways on, the other just by his tail as he disappeared into the brush. I made record time down that hill, jumping fallen trees, and loading as I went. How I escaped a broken leg I don't know, but I got below him, and saw the beast coming down, evidently very sick. Again, again, and again, I let him have it. I ran up to within forty yards, and when he saw me he lowered and shook his head, but he was too far gone to do more. Not wishing to spoil his skull, I waited till he turned and gave him his quietus behind the shoulder; he ran twenty yards and fell on his back into a deeply cut watercourse. As we stood on the bank looking down at his great carcase, it struck me as strange that such an ungainly beast, without excessive speed or activity, with eyes and ears small in proportion to those of a stag, should have managed to survive at all in this thickly populated Europe of ours, his very existence being only known to comparatively few people. As he lay I took the following measurements:

	ft.	in.
From nose to root of tail	10	1
From top of hoof to top of withers . .	5	11
Circumference of leg below the knee . .	0	10
" of the knee	1	4
" below the hock . . .	0	10½
" round the hock . . .	1	7
Girth of body	8	4

The last measurement, girth of body, is a little uncertain, as the beast was lying huddled up, I could not get the tape underneath him, and therefore had to measure one side and then double it.

The Lesghian and I prepared to sleep out. We gralloched the bull, and a difficult and dirty business it was, as his carcase had dammed up the rivulet, and we were working up to our knees in water and blood. We took some of his rump steak, cut it into little chunks and skewered it alternately with lumps of fat on a long stick carefully trimmed. When cooked it looked and smelt so delicious that I would not then have traded those kabobs for the best dinner Delmonico could turn out. I was very hungry, and fell to with a will: the will was there but not the power. One might just as well have tried to chew a stone. Even the hunter was beaten. He tried again with liver, but as I draw the line at that, I omitted supper, and looked forward to what the morrow might bring forth. Early next morning the men came with food, &c. We cut down some small trees, barked them, and got them partially under the aurochs, then tying ropes to a horn and to each of his legs, all hands hauled first at one leg then at another, making fast the slack gained with each haul, until by degrees we got him out of the stream on to the bank. We then skinned him and cut the meat roughly off his skeleton. His bones were all carefully put into sacks. The skin, bones, and a little meat formed a heavy load for three ponies, which the men had managed to bring from camp somehow. That afternoon and the two following days we were busy drying and preparing the skin and skeleton. Having been successful with the bull, I thought I would try to get a female, so we pursued the same tactics and I eventually shot a cow, whose skin and skeleton we also preserved. Some weeks after that, I found myself face to face with a grand old bull, bigger than my first victim. We were hidden in the bush and he stood in the open wood, and grand indeed he looked. I laid my rifle down, for the temptation was great, and I would not have slain him for 1,000*l.* I took off my cap to him out of respect for a noble representative of a nearly extinct species. I had got what I wanted, and mine should not be the hand to hurry further the extermination of a fading race for mere wanton sport. I shot the aurochsen for the

express purpose of presenting them to the British Museum, where I have every reason to believe they are extremely appreciated.

The aurochs of Europe is closely allied to the American bison (*Bos americanus*), but surpasses it in size. Its legs and tail are larger, and its hind-quarters not so low. The mane is much less developed, composed of shorter hairs, and not extending so far back as in the New World species, in which, besides, it is of a black colour.

CHAPTER V

OVIS ARGALI OF MONGOLIA

BY ST. GEORGE LITTLEDALE

THE *Ovis argali* is, thanks to his richly-coloured coat of reddish grey, an exceedingly handsome beast, but his horns, though more massive, lack the sweeping character which is the glory of the *Ovis poli*. So like, however, are these great sheep of the Altai and the Pamir, that Dr. Günther, to whom I am deeply indebted for much valuable assistance, says that to distinguish between them 'is a very hard nut to crack, and perhaps the only solution will be to find a distinction (if such exists) in the osteology of the ewes.' He adds that in the poli group the horns are less massive at the base than the horns of the argali; and that the argali has never a ruff or mane.

It was in the summer of 1889 that my wife and myself, accompanied by Mr. Whitbread and Mr. Cobbold, reached the Tabagatai Mountains in search of argali. Though anxious to help us, the Russians knew nothing for certain about the districts in which we were most likely to find our game, and such hearsay evidence as they had from the Kirghiz I knew from former experience to be utterly untrustworthy.

Our best chance appeared to be to take a line of our own, and this we eventually did, guided in our choice of ground by the consideration of elevation alone, knowing well that as a rule the biggest 'heads' are to be found in the highest mountains or in the largest forests. Nor had we any cause to regret our course; for, on our return journey, a flying visit to the mountains originally recommended to us proved that game

in them was scarce and the dimensions of the heads insignificant.

Leaving Zaizan, on the frontier of Russian territory, with a pack train of ponies, bullocks, and camels, we travelled by an easy road through the Saiar range, into the desert, with its familiar pests of mosquitoes and horseflies and its never-to-be-forgotten odour of sage-brush and horse-sweat.

But on the high ground beyond were the great sheep which we had come so far to seek, and in the high range of the Saiar Mountains and two neighbouring ranges we had fair sport, killing not only the beasts we came especially to find, but also specimens of *Antilope subgutturosa*, and the ibex (*Capra sibirica*) which shares the ground with the argali, bears and tigers.

A passport which the natives could not read, in vermilion and yellow, secured the neutrality of those we met, but a letter of introduction to the Chinese Governor of the district procured us a typical escort of natives, excellent horsemen and good fellows, armed, however, somewhat oddly—to wit, one carrying a Russian Berdan rifle without cartridges; another provided with an old Tower musket cut off half-way down the barrel, consequently without a foresight; a third with a matchlock; and a fourth with a horn arrangement on his finger for archery. With this little army at our back we naturally threw fear to the winds, and pressed on into the strongholds of the sheep.

Like all their race we found the argali keen of scent and quick-sighted to such a degree as to make a successful stalk a feat to be proud of. Here, as elsewhere, we discovered that separate hills seemed to be set apart for the ewes and lambs, while the rams sought a dignified seclusion elsewhere.

The reddish-grey coat of the argali is an additional point in his favour, since in a country the dominant tone of which is that of a gravel walk it is extremely hard to pick out the beasts with the spy-glass. Moreover the Altai does not resemble the Pamir in its general features. The Pamir being at a much

greater elevation and the ground less broken, the sheep which inhabit it neither feel the heat so much as the argali do, nor are they able to find such shelter, even if they should want it, as is afforded by the broken ground of the Altai. The lower portion of the hills we hunted in 1889 was of sandstone formation, eaten out into fantastic shapes and curious cavities, in which the sheep sought shelter from the sun, actually going to ground under rocks and in holes to such an extent as to make a search for them during the five or six hottest hours of the day absolutely useless.

The nature of the ground in which each variety of these great sheep live accounts, I think, for the different character of their horns. The wide sweep of the poli's horns is fitting and natural in a beast whose home is on the broad rolling upland plateaux, and no less natural is it that the argali's horns should be more contracted and heavy, since he lives in a land of rocks, where sharp corners and narrow paths are in the order of his daily life.

Perhaps it is not as easy to explain the great size of the horns of the poli, compared with those of the argali, bearing in mind the cruel climate and scanty herbage to which the former is accustomed. Added to natural advantages of scent and sight of a very high order, *Ovis argali* had a good deal in his favour in the land he inhabited; for, owing to the immediate neighbourhood of a good deal of snow with sun-baked rock and shale, unforeseen currents of air were continually being generated which were fatal to many a stalk, whilst upon stormy days (which were many) the wind roared and twisted about in the rocky gorges in the most exasperating manner. In the highest range, indeed, of those which we tried, which was a regular cloud trap, we were soaked to the skin nearly every day.

There is still another point in this Central Asian sport against the shooter: that is, the difficulty of judging distance consequent on the clearness of the atmosphere and the general absence of objects by which to test the relative size of your game. As a rule, the shots you get are fired from the top of

one mound at a sheep on the top of another, and unless you are using a rifle with a very flat trajectory, and have (as all men should in Central Asia) a rough mental table, to suit your own eyesight, of the distances at which an eye or an ear would be visible, you are extremely likely to throw a great many shots away.

Altogether, we were somewhat unlucky in this expedition. The sheep's habit of disappearing in cavities and under rocks from 10 A.M. until evening made the sport less interesting than the pursuit of *Ovis poli*, who is always 'on view,' and even when hard hit the extraordinary vitality of the beast not infrequently enables him to escape the hunter. However, in the second range which we tried I had fair success, bagging six or seven heads varying from thirty-six to forty inches. The ground here was a range some three thousand feet above the level of the plains, whose top was reached by occasional valleys up which it was possible to ride, while the northern face of the range was steep and rocky, a favourite haunt of *Capra sibirica.*

My biggest ram was killed in ground even lower than this, among the sandstone hollows of the third range which we tried, at an elevation of not more than two hundred feet above the plain. This was a nice head of fifty inches.

Before closing these notes upon the sheep of Asia, may I respectfully invite the scientific naturalist to come to the assistance of the unlearned sheep-shooter?—to whom the inconvenient question is often put, 'Are your trophies Ovis poli, karelini, or argali?' for to this he is constrained in his ignorance to reply 'I'll be shot if I know!'

Would it not be well to place on record a revised classification of the sheep of Asia, before erroneously-applied names attach too firmly by common usage?

In no contentious or captious spirit I would plead for a new and distinct classification, in which the sheep of Asia, the *túr* of the Caucasus, and the ibex of the different parts of the world may be clearly distinguished the one from the other.

CHAPTER VI

THE CHAMOIS

BY W. A. BAILLIE-GROHMAN

CHAMOIS are to be found in all the higher mountain systems of Central and Southern Europe. They are indigenous to timber-line regions from the Caucasus to the Pyrenees, and from the Carpathians to the Alps of the Epirus. Switzerland and the Austrian Alps have, however, always been their chief home. To the sportsman the latter region, with its large estates and sport-loving landed aristocracy, offers a much more inviting field than does Switzerland, where the republican spirit and peasant proprietorship make the preservation of game by individuals almost impossible, and the chase in consequence uncertain and difficult. It is fair, however, to add that the efforts made by several of the Swiss Cantons in the course of the last ten or twenty years will presumably prevent the extermination of the chamois in Switzerland, which but for strictly enforced regulations would at one time have been only a matter of a few years. That the democratic spirit of republics is not one favourable to the preservation of game, we can see by the dire results it has worked in the Great Transatlantic Federation, where some species of *feræ naturæ* have practically become extinct.

The experience of those who have killed or tried to kill chamois in the Pyrenees or in Albania would show that sport in those countries is somewhat uncertain, and to obtain it lengthy expeditions have to be undertaken, which in the majority of cases, the writer's not excepted, are not suc-

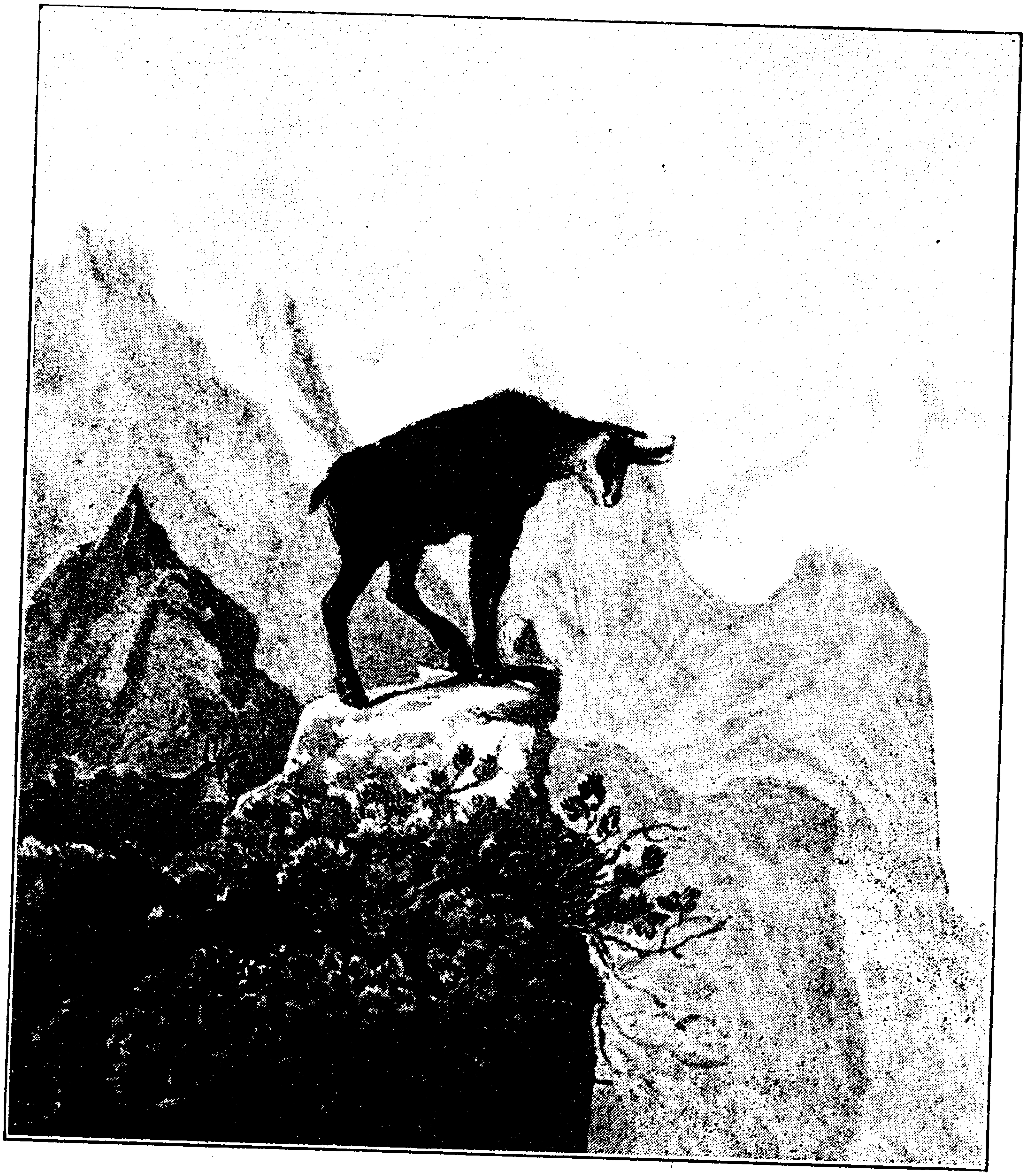
cessful. It will therefore, we are inclined to think, best serve the practical purposes of these volumes if prominence is given to chamois shooting in those regions of the Central Alps which may be considered the true home of that sport.

In Tyrol, the Bavarian Highlands,[1] Upper Austria, and Styria, the regions best adapted for chamois shoots are in the hands of the Austrian nobility, or of the Imperial House, or of foreign potentates, who in their own countries cannot establish chamois drives. Besides these large and well-guarded preserves, there are also peasant-shoots where strangers can with comparative ease procure permission to stalk. With few exceptions, to one of which more detailed reference will be made, the sport obtainable in peasant-shoots is poor ; for where it is open to the natives (born mountaineers, and as keen and hardy sportsmen as can be found anywhere), game is in consequence of constant molestation more difficult of approach, and less plentiful than in preserves where, with the exception of a fortnight or two in the autumn, it is never disturbed. In the peasant-shoots chamois are never driven but always stalked, and the stranger attempting to do as the natives do must make up his mind to undergo very hard work, put up with very rough fare, and must consider himself lucky if he manages to get a shot the third or fourth day out. Indeed, there can be no better test of a man's love for sport or of his woodcraft than to let him attempt to get a chamois in a peasant's-shoot unassisted by native hunters. On the other hand, to stalk chamois in a preserve under the guidance of a keeper is really a very ordinary matter ; good wind, a fairly clear head, and moderately good eyesight are the chief qualifications beyond the knack of doing exactly what one is told.

The nature of the ground where chamois are found differs vastly. Thus in the Bavarian Highlands where the shooting rights are almost entirely in the hands of the Royal House,

[1] The term 'Bavarian Tyrol' one often hears used is entirely incorrect. There is but one Tyrol, and for more than five hundred years it has formed part of the Austrian Empire.

and where game is very closely guarded, the mountains frequented by chamois are low, hardly reaching beyond timber-line, and so easy to ascend as to almost allow a man on horse-

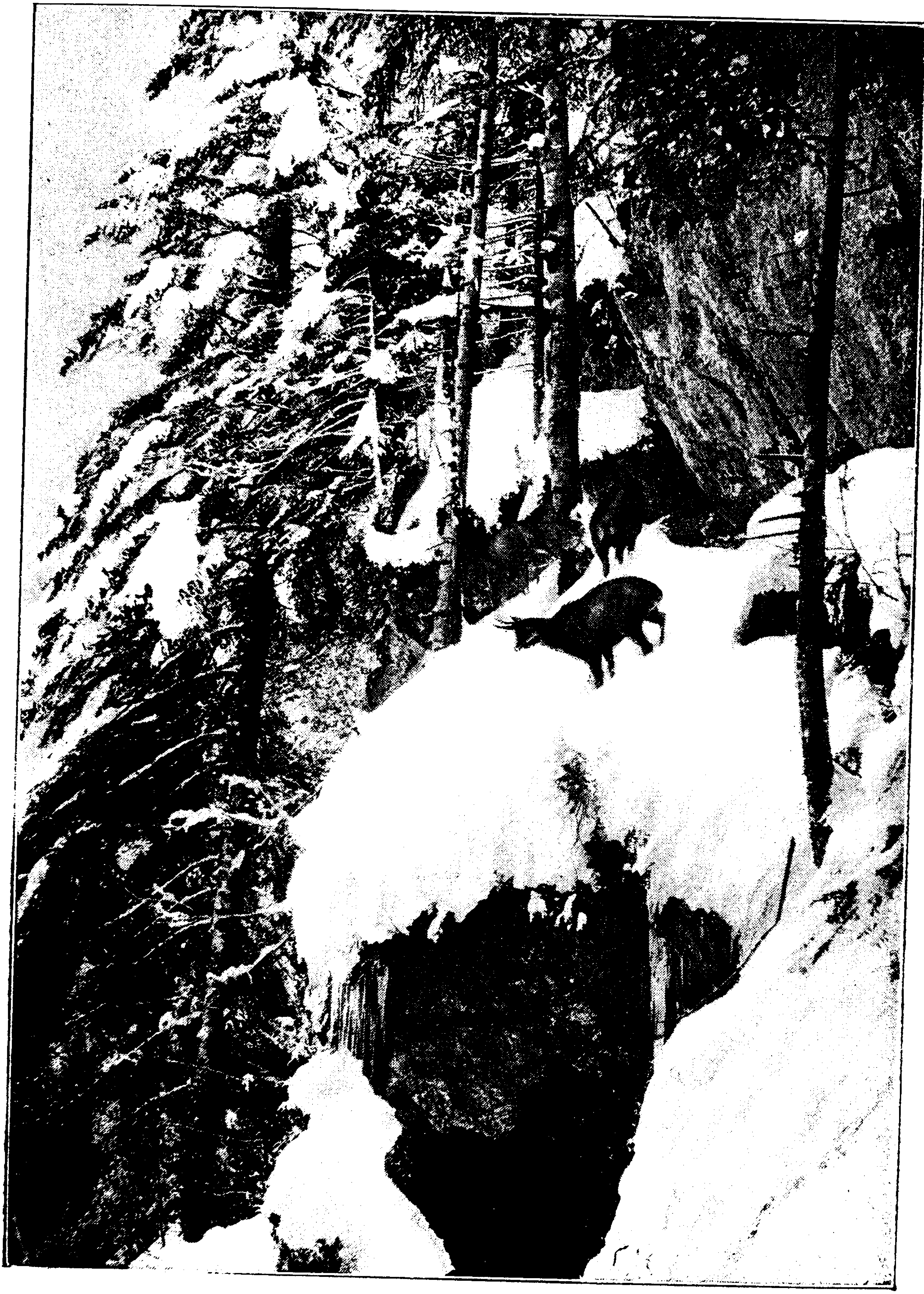


The spy chamois

back to climb their slopes. Here stalking is sometimes easier than deer stalking is in Scotland, for there is more cover for the sportsman. In an easy country such as this, a rigorous day and night watch has to be kept up, and poaching is made

a matter of life and death; indeed, in the eyes of the Bavarian keeper, his Tyrolese neighbour used to be regarded much in the same light as the American frontiersman looks upon redskins, i.e. the only good Indian he knows is a dead Indian. Chamois poachers are by no means to be placed on the same low level as Bill Sikes or Tom Stubbs of evil mien, who sneak about English preserves. The 'Freeshooters of the Alps,' as they are often called, are invariably brave fellows, who literally take their lives in their hands, and are not moved by mercenary motives, but by their inborn love of the chase. As a rule, they make the best and most faithful keepers; experience in hundreds of cases testifying to the correctness of the old saying, that a good keeper is but a good poacher turned outside in. No finer specimens of manhood can be discovered than among such reformed and unreformed poachers, and most of the great lords take pride in having the most dare-devil fellows and best cragsmen as keepers. Their whole lives are passed in the great silent solitudes of timber-line, and for weeks at a time they don't see a human being, and undergo hardships of which the ordinary dweller in civilisation has no conception.

The shooting season varies triflingly; in some parts of the Alps it begins in July, and ends in December, in others it begins only in August. The rutting season is in November, and that is the only time when old bucks are found constantly mingling with the does. Were it not for the inclemencies of the Alpine climate, which usually covers inhospitable timber-line with several feet of snow by the end of October, the rutting season would be the best for stalking, for chamois are then less wary, and their coats have by that time got darker in colour, and hence they are more easily seen than earlier in the season; but as a rule the chase is made impossible to all but the most hardy by the deep snow. The interesting instantaneous photograph taken of chamois during the rutting time shows how dark their coats have got by that time. September and October are as a rule the months chosen for driving and stalking. The



CHAMOIS

(From an instantaneous Photograph)

kids, which are dropped in April, have by that time attained a sufficient growth to enable them to get their own living under the care of a foster-mother should their own parent accidentally fall a victim to the rifle of a tiro who in the excitement of a stalk has failed to distinguish the doe from the buck ; by no means an easy task, for both have the same sized horns, though triflingly different in shape and position, those of the buck being a little thicker at the base and rising more parallel to each other. Speaking of horns, it may be as well to give the size of the largest of the many hundred heads of which the writer has kept record. The two largest pair are in the collections of the reigning Duke of Saxe-Coburg at the Hinter Riss, in Tyrol, and in that of Count Arco at Munich, where over seven thousand horns and antlers form a particularly interesting collection. They each measure over twelve inches along the curve and over four inches in circumference at the base ; the former are those of a buck killed by the Duke in Tyrol, the other was bought by the late Count Arco. Eleven-inch heads are still obtainable, though very rare, the largest of my own killing being of that length, and four inches in circumference. A first-rate ordinary buck tapes ten inches. Abnormally long doe's horns are also occasionally seen, but the slimness at the base invariably betrays the sex. In some of the mountain ranges isolated from other homes of chamois, the heads, in consequence of constant inbreeding, assume a certain type by which those versed in antler-lore can recognise their origin. Thus the horns will perhaps be closer together or be wider apart, or have a more or less developed crook, or stand at a slightly different angle than they ordinarily do. The chamois horns of the Epirus, the Carpathians and the Pyrenees are smaller than those found in the Central Alps, and the animals are also lighter. The weight of a good buck of the Alps is about 60 lbs., though the writer has killed one in the Dolomites weighing 73 lbs., and Tschuddi mentions an authentic instance of 125 lbs., and another of 92 lbs., the latter buck being killed in 1870 on the

Santis. The does are not as heavy, ordinarily weighing from 45 lbs. to 50 lbs.

A trophy one often sees on the hats of sportsmen on the Continent is the so-called 'Gamsbart,' literally 'beard of the chamois.' This name is misleading, for these bunches are made of the hairs that grow along the backbone, from the neck to the tail. These hairs are in summer not much longer than any other part of the coat, but as the rutting time approaches they grow longer, and in November they are from six to eight inches, and the longer they are the greater their beauty in the eyes of the natives, who will pay large prices for particularly long bunches. A peculiarity little known to naturalists is the fact that when these hairs are stroked from the roots toward the tips they become positively, and when rubbed in the opposite direction they become negatively, electric.

CHAMOIS PRESERVES AND PEASANT-SHOOTS

One of the regions most attractive to the sportsman is North Tyrol, and more particularly that wide strip of mountain-land skirting the Bavarian boundary on the one side and the Inn Valley on the other. Here some of the best preserves in the world are situated, five royal shoots almost abutting on each other. These mountains, in character very similar to the better known Dolomites, which range is now, alas! thanks to tourists and peasant-shoots, pretty well cleared of chamois, are the *beau idéal* of what chamois ground should be. Most of this area consists of vast almost verdureless limestone ranges of jagged peaks intersected by deep ravines, where even in the hottest weather snowfields nestling in shady recesses form the chamois' favourite *rendezvous*. Too barren to make the cultivation of those elevated Alpine pasturages, so common in Tyrol and Switzerland, and which as a rule are fatal to preserves, a paying industry, this sea of mountains is practically one chamois preserve. In this tract, containing seven shoots, the

annual bag aggregates between five hundred and eight hundred chamois, while the total head must be over four thousand.

One is often asked what the cost of a moderately large chamois preserve amounts to. It is difficult to give any hard and fast rule; one thing, however, is certain, that a shoot, say of mixed game, i.e. stag and chamois, can be obtained for a fourth or fifth of the cost of a Scotch forest. The chief expense are the keepers, whose wages (from 40*l.* to 50*l.* per annum) are, however, low. As a rule, the ground is rented from the Crown, and if it has been hitherto unpreserved, the rental is a nominal sum. In three years, if not shot over at all, the game will have increased probably three or four fold, not only from natural increase, but, being entirely undisturbed, game from adjoining shoots will have been attracted. If any Alpine pasture-rights on any part of the leased land exist, these 'servitudes,' as they are called, will have to be bought up or leased from the individual peasant owners.

The following instance, which may be regarded as authentic, will show what can be done in this respect. In 1866 four sportsmen rented on long lease from several Alpine hamlets a number of adjoining 'servitudes,' and placed three trustworthy keepers over the shoot, whose sole duty was to prevent poaching. When they started there were between 100 and 140 chamois on the place. In 1867 they killed fourteen, and from that on the bag gradually increased until in 1881 they shot 113 head, while the entire bag from 1867 to 1883 amounted to 766 head, the average number of shooting days being twelve every year. Their rent and keepers' wages came to under 300*l.* per annum, and a separate gratuity of ten florins for every chamois killed by the owners offered a further inducement to the keepers to prevent poaching.

Before the year 1848, the Austrian red deer and chamois preserves carried infinitely more game than they do now, though they still are probably the best stocked that exist. In that dire year of revolution the destruction, amounting in only too many instances to complete extermination by the rebel

peasantry, gave the deathblow to the cherished rights of the chase—relics of the feudal ages—claimed by all the large landed proprietors. The peasant-shoots as a consequence of the revolution came into existence in that year; for anterior to it the peasantry were feudal vassals to whom their seigneur's game was almost as sacred as their lives, poaching in the olden days being an offence punished by loss of limb or life. It may be interesting to refer briefly to one of the few instances of peasant-shoots dating back to earlier times than 1848.

In this instance, the rights of the chase date back to the year 1709, when an imperial grant conveyed the sporting privileges to the peasantry of this particular valley as a reward for their conspicuous bravery in the defence of their country against overwhelming odds. Since that time the heirs of the twenty-six peasants who participated in the war have exercised the sporting rights over a very large area. By careful management and the adoption of the following rules, it is made a profitable property. At the commencement of the shooting season the twenty-six shareholders, as they might be called, meet in solemn conclave and settle among themselves what number of chamois and stags are to be killed that season, the severity or mildness of the preceding winter having, as in all Alpine districts, much to do with this matter, and they also select three of their number, who for the ensuing twelve months have to act as keepers to guard against poachers from the adjoining valleys. During the season, any one member may shoot as many head as he chooses until the agreed upon total is reached. As there is a good market for the game within reach, every head is turned over to the treasurer, who sells it. Half of the proceeds goes to the man who killed it, while the other goes to a general fund which is equally divided among the twenty-six members at the end of the season, so that a man who has not fired a shot draws at the end of the year what to these simple folk is a considerable sum. In one year, when the writer was shooting there, the total reached three

hundred head of big game, i.e. chamois, stags, and roe-deer, and one was placed in the odd position of not only not having to pay for the capital sport one had enjoyed, but having money offered one in the shape of half of the proceeds of all one had killed.

CHAMOIS STALKING

At a discussion which once arose at the table of the Prince Consort's brother, H.R.H. the reigning Duke of Saxe-Coburg—a veteran Nimrod, who for the last fifty years has unquestionably shown himself, next to the Emperor of Austria, the keenest royal sportsman in Europe—the question arose whether chamois would share the fate of their kindred the ibex and become extinct. Somebody made the paradoxical reply: 'Not so long as they are only killed by potentates and by peasants.' While this cannot of course be taken literally, there is yet some truth in it, for it indicates the respective methods of shooting chamois—that is, by driving and by stalking; the one being the pleasure of the highest in the land, the other infinitely harder and more truly sportsmanlike method being usually only pursued by the hardy peasant and daring poacher. In pursuing the argument that arose as to the respective merits of stalking and driving, the host, whose prowess as a bold stalker in his younger days was well known to all present, remarked with sparkling eyes that he would willingly give all the 149 driven chamois he killed the preceding season for the half-dozen he stalked half a century before in the first season he visited those mountains, a sentiment with which every keen sportsman will heartily agree.[1]

Stalking chamois is hard work, often very hard work, but

[1] The above was written before the lamented and unexpectedly sudden death of this singularly versatile and able prince, who, without question, was also the greatest Nimrod of his time. His demise, in his seventy-sixth year, was one befitting his sportsman's career, the apoplectic attack from which he never rallied overtaking him on his return from a stalk, in which he had killed two 14-point stags. His last words, murmured in a semi-conscious condition, were: 'Let the drive commence.'

it is keener sport than any the average sportsman comes across. Amid the wild grandeur of unfrequented mountain recesses, one's woodcraft, one's endurance, and one's agility are pitted against the instincts of what is probably the wariest game that exists, and one, too, which is protected by the kind offices of nature, who has made its home, as a rule, inaccessible to all but the most surefooted. The dangers besetting the path of the lonely stalker have from time immemorial lent themselves in a particularly tempting manner to exaggeration, so that most accounts of the sport are not only given at third hand, but are overladen with romantic nonsense.

For a narrative of actual stalking experiences which possibly may prove more useful than mere generalisations, it may be as well to describe a typical stalk, one of many the writer has enjoyed in the peasant-shoot already alluded to; for it will give a better idea of the ordinary incidents of stalking than were one to relate the more everyday events of a stalk in a preserve where game is plentiful and where one has simply to follow the directions of the keeper. Under the circumstances the hope is entertained that the use of the otherwise undesirable 'ego' will be permitted.

One of the first things to settle before starting on a chamois stalk is the question where shelter for the night nearest to the hunting ground can be obtained. If roughing is not objected to, a light sleeping bag made of waterproof canvas with fur lining and weighing not more than ten or twelve pounds is a friend in need. With it and the shelter of the widespreading branches of an arve or pine, the night or two passed on high need not entail great discomforts; but, as a rule, a more substantial roof overhead becomes acceptable, particularly if, as in this instance, the advent of October brings with it a snowstorm. If there are any Alp-huts at all handy, their shingle roof and loft filled with fragrant hay offer a more desirable shelter and sleeping accommodation than a pine-tree and sleeping bag.

A long day's walk from the main valley, with three or four

days' provisions stowed away in the 'Rücksack'—of which useful style of game-bag a word anon—brought me at dusk to the chalet selected on this occasion. It had been vacated five or six weeks before by its solitary inmate and his dozen or so of hardy mountain-bred cattle, man and beast having returned to lower and more hospitable regions after their three or four weeks' sojourn in these elevated solitudes. The small low log hut was about as primitive and isolated a human habitation as one could imagine. The nearest dwelling was five hours' walk off, and as one looked upon the scene familiar to one from stalks of old, a delightful sense of solitude made itself felt. In front of the hut the primitive 'Brunnen,' made out of a hollowed pine-tree, spouted forth gaily and merrily a clear stream fed from a rill coming straight from the nearest snow-field a few hundred feet above the hut. A sound usually indicative of human presence, it now only heightened the sense of the utter solitude of the scene upon which the sombre mantle of night was about to sink. As the door was locked, a few shingles removed from one corner where the eaves of the slanting roof approached the ground to within three feet gave ingress to the hayloft, from which the soot-begrimed interior of the primitively constructed hut could be gained by a short ladder. The door was easily unfastened from the inside, and a fire on the open hearth soon sent forth its genial blaze. From the owner of the hut, whose habitation was one of the last which I passed that morning on my way up, the hiding-place of a frying-pan and a small stock of flour was learnt, and with these additions to what I had brought, a substantial meal of 'schmarrn' and tea was soon prepared and eaten, while a pipe or two before turning into the hay for the night were enjoyed sitting on a primitive bench in front of the chalet. From here in the bright moonlight I could see my goal for the morrow, the declivities of a boldly rising peak which I knew of yore to be a pretty sure find for chamois at this season of the year, and where on the occasion of my last visit I had demonstrated to a friend how easy it was to spoil a stalk and miss a chamois.

A sharp frost, causing a chilly mist to rise from the steaming moorland surrounding the hut, however, sent me soon indoors and to my night's quarters in the dry fragrant hay, where, enfolded in a plaid, sleep after a twenty-five-mile walk was indeed sound and restful.

The following morning I was up before dawn, and after a breakfast of a pannikin of steaming tea and some bacon, I reached the first rocks at the base of the peak, before as much as 'shooting light' had chased away darkness. To be early on the ground is a great advantage, for the chamois' day is half over at what most people would consider a reasonable breakfast hour, and moreover it usually gives the stalker the two winds, i.e. the one ordinarily blowing down the mountain before the rays of the rising sun strike the slope, and the one blowing in the contrary direction after that has occurred. Leading up to the rocks was an exceedingly steep grassy slope, which the hard frost of the night had turned into a precipitous field of ice, to ascend which my light pair of crampons (so useful for rockwork in a limestone formation) came in very handy. On reaching a good point of outlook a definite plan of action had to be decided upon. As the wind would be soon drawing up the slope, it became necessary to gain a point above the proposed stalking ground, which could be done by climbing the peak from the back. It was not of great altitude, perhaps some two thousand five hundred or two thousand six hundred feet over the moor where the Alp-hut stood, but the back rose in bold proportions and presented a face almost bare of vegetation, towering up like a huge wall, so that the task of scaling it from that side was a stiff one. A couloir-like cleft running almost vertically up the face of the rock offered the only practicable means of ascending the first ninety or hundred feet, by a free use of one's back and knees in chimney-sweeper's style. One's progress would have been more rapid but for the rifle and rücksack hampering one's movements. Protected, as the muzzle of the rifle should always be when real climbing is to be done, by a sheath of sole-leather five or six inches long

drawn over the sight, it often materially assists to take the rifle apart, and wrap the stock and the barrels separately in the folds of the game-bag (to prevent chafing). By thus making a compact parcel of it, and with the assistance of a few fathoms of strong cord, which should always be carried with one, it can be drawn up after one at the more difficult places. Three hours' stiff climbing landed me at last near the top of the peak, where further progress was rendered easier by the existence of horizontal ledges running towards the side of the mountain which I was striving to gain. Wriggling along one of these bands, now on my hands and knees, then again in an upright position with my back scraping against the rock, I finally weathered the corner or shoulder of the mountain, and there at my feet lay the slope to gain the command of which had entailed such hard work.

The slope I overlooked was perfect stalking ground. Far less precipitous than the one I had ascended, it fell away from the top in a series of terrace-like steps, each separated from the next by small precipices from twenty to fifty feet in height. The uppermost steps were almost verdureless, while the middle and lower ones broadened into grassy ledges with thick beds of the dwarf pine (latchen), affording good grazing and capital shelter. The breeze was drawing briskly up the slope, and everything, from the nature of the ground to the glorious autumn weather and crisp atmosphere of high altitudes, seemed favourable to good sport.

From nine to twelve in the forenoon is the worst time to spy for chamois, for after their morning graze they invariably, except in very bad weather, lie down in some sheltered nook where it is almost impossible to spot them. At noon they rise, if only for a few minutes to nibble at the nearest blades of grass and resume their 'couch.' An old poacher's saying that the older the buck the more punctual he is, emphasises this habit, which, by-the bye, is also observed by red deer. An hour's rest, with a bite of lunch and a pull or two at a flask of genuine kirsch, formed an acceptable interlude and when

the shadow of my alpenstock, planted vertically in a crack (thus forming a primitive kind of sun-dial), had almost disappeared, I knew it was about time to commence a sharp look out. But, as is so often the case, I was looking for something in the distance which, had I but known it, was right before me. For a quarter of an hour I had been scanning the different ledges with my glass without discovering anything, and I was closing the telescope rather impatiently and with unnecessary violence, thereby making a very audible metallic click, when suddenly, with a loud whistle of alarm, a fine buck jumped into my line of sight on the ledge below the one I occupied, not more than thirty-five yards off. At the moment I was lounging with my back against a rock, my legs, on account of the narrowness of the ledge, dangling over the brink, and my rifle, still unjointed, safe in the game-bag. Throwing my body to one side as the buck jumped into view, I commenced frantically to fumble for the arm ; but the buck was not so easily duped, and by the time I had put it together, wrenched the protector from the muzzle and slipped cartridges in, he had time to put a hundred and thirty yards between himself and that alarming apparition of which he just caught a glimpse. Though he kept to the same ledge he was only visible for brief moments, projecting rocks obstructing the line of sight. So old Reliable, a favourite ·500 Express that had done good work in the Rockies and the Sierras, did not get a fair chance, and the buck made no sign he was hit, though it certainly seemed to me that I heard the thud of the ball. Making a détour to gain the lower level, I hurried to the spot and soon found blood, though only in scanty patches. The colour was, however, bright red and frothy, so it evidently was a lung shot. Wounded chamois give no end of trouble, and this one was no exception, for generally it means tracking a beast which instinctively resorts to its matchless climbing faculties to outwit its pursuer. As a rule, it is far wiser not to follow the animal at once, but to seek a prominent point where a good view of the surroundings can be gained, and watch where the beast goes to. If it is only slightly wounded the

pursuit will probably be fruitless, and if hard hit it is best to let the effect of the wound tell upon the vitality of the animal by waiting an hour or two. If hard hit, it won't go far so long as it remains unpursued, and the great thing is to see where it goes to cover. The temptation to follow the tracks at once is, however, one which in the excitement of the moment is not so easily resisted, and in this instance it was doubly unwise to give way to it, for my shot was less likely to be a fatal one (having been fired at a steep slant downwards) than had it been delivered on the level. It was noon when I fired ; it was past four when, after a persistent chase, I caught sight of the buck four hundred yards off, still on his legs, though evidently hard hit. Probably he had kept me in sight all the time, jumping up from his blood-bespattered couches whenever I got too near.

At sunset I was no closer to him, and as he was taking me further and further away from the chalet, a decision whether to sleep out or whether to return for the night to the hut became imperative. Sleeping out, quite unprepared as I happened to be, was, at the altitude I was on and in the chilly October nights, a contingency which if not really necessary was better avoided, particularly as the weather was rapidly assuming a threatening look, and the sky became covered with leaden-hued clouds indicative of coming snow. Taking the shortest route, it was, however, pitch dark when I finally reached the hut. A couple of hours later, when I turned in, a strong wind was blowing, which soon afterwards rose to a fierce gale that made the timbers of the ramshackle old hut groan and creak. It was still quite dark when I woke up, an ominous stillness contrasting strangely with the preceding uproar of the elements. The cause was soon explained, for on going to the door and trying to open it I found a couple of feet of snow had drifted against it, and I had to take it off its primitive raw-hide hinges to get it open at all. The air was thick with big flakes, and the ground was covered to a depth of four or five inches. It was noon before it stopped snowing, though the leaden, sunless sky did not look even then very promising. To search for the

wounded buck under such circumstances seemed almost hopeless, and entirely so if he had died during the night, but eventually I decided to make an attempt. Making my way as best I could by the easiest approach to the ledge where I last saw the buck, I was of course wet to the skin long ere I reached the spot, for forcing one's way through the twisted and tangled masses of the dwarf pine, snow clinging to every twig and branch, is the reverse of agreeable. However, I was to be rewarded, for I had not gone far when I heard the whistle emitted by the chamois when suddenly alarmed. Looking up, I saw him standing on the ledge above me, his shaggy coat outlined against the sky. It was his last tottering effort to fly from his pursuer, and I believe I almost could have caught him, so enfeebled had he become by loss of blood. A bullet placed in a better place than the last one soon put him out of his misery. It was a good five or six year old buck, and my first bullet had struck him rather high between the spine and the lungs, but ranging downwards had cut a furrow in the one lung on the side of its exit. Overshooting game when firing downwards should be specially guarded against. For shots under similar circumstances and at ordinary distances, it is a safe rule to see daylight between the top of the bead and the body; where otherwise, if the shot were fired on level ground, one would hold the bead right on the body.

Cutting a branch or two from the nearest dwarf pine and making use of the cord in my rücksack, a sort of sleigh was easily improvised, and seeing a steep and uninterrupted slope near at hand, I bundled the buck and myself down it in capital time, and in a flying cloud of snow. At the bottom I brittled the animal, for from there on I had to carry him, and finally reached the hut just as dusk and snow were simultaneously commencing to fall upon the landscape. A roaring fire and the fact that I had brought a change of underclothing with me, and discovered a pair of discarded old sabots in the adjoining cowshed, together with the solacing effects of a delicious stew of liver and brain, soon put a rosier hue upon things generally,

and the fact that a good buck was hanging by the crooks of his horns to the eaves outside had probably also something to do with it.

One more chamois stalking incident may perhaps be permitted to find space here, as it will illustrate another aspect of the sport obtainable in a peasant-shoot. The shoot in question skirted for many miles the boundary between Tyrol and Bavaria ; the preserve on the latter side marching with it, being a favourite hunting ground of the late King, was hence particularly strictly guarded. Preparing myself for a three or four days' absence in the mountains, I left the main valley one August morning and reached the Alp-hut which I proposed to make my headquarters late the same afternoon. In the locality referred to, the duty of herding the cattle driven up to these elevated pasturages is performed by girls instead of by men. The stout-armed and stout-hearted lass will often be for weeks quite alone in her hut, miles of mountain wilds between her and the nearest habitation. On getting to the hut I found installed in it, instead of buxom Moidl, her brother Hans, a bold climber, inveterate stalker, and best of fellows withal. Hans and I were acquaintances of old, and he had no secrets from me. What that meant will be better understood when it is mentioned that the Bavarian frontier line was within rifleshot of the hut, following the backbone of a steep ridge. Beyond that invisible line death awaited the poacher ; for the Bavarian keepers were well known to entertain no scruples about reversing the order prescribed by law, and would shoot first and then only call upon their foe to surrender, a condition of things which naturally led to retaliation and sanguinary feuds. Hans and I were sitting in front of the hut smoking our pipes, and it needed no glasses to see that those black specks on yonder arête were the game of game, and Hans' eyes, sparkling with excitement, involuntarily travelled from the chamois on the far cliff towards a huge old larch-tree a couple of hundred yards from where we were sitting, shattered

ages ago by lightning, and now affording in its hollow trunk a safe hiding-place for his rifle and capacious rücksack, in the folds of which more than one buck had, I suspect, been 'extradited' back to Tyrol. There was really no reason for Hans to hide his rifle, for he was here on his own ground, but being a wild and uninhabited stretch of country and only peasants their victims, the Bavarian keepers would often defy the rules of international intercourse, and would cross into Tyrol to search Alp-huts they suspected of harbouring poachers—a proceeding which was all the more aggravating to the Tyrolese, for in consequence of topographical reasons the chamois were, if length of residence counted, really more their own than the Bavarian King's—the peculiar lay of the country causing the chamois to leave the Tyrolese mountains, which faced the south, during the hot summer months to seek the cooler northern aspect on the Bavarian side of the line, returning to their home-range with the first September or October snowstorm, after which period the south aspect of the mountains remained their home for eight or nine months of the year. The King usually held his big drives in August, an exceptionally early period, and, as the Tyrolese persisted in maintaining, they were held so early for the special purpose of getting their chamois, a pretension which received some colour in their eyes by the circumstance that the keepers used to take special precautions at this season to prevent them escaping over the line.

My only hope for sport in that neighbourhood, those hot August days, lay in the circumstance that at one point the boundary line, instead of following the watershed, crossed from point to point, leaving the northern declivities of one of the higher peaks down to its base on the Tyrolese side. Towards this spot, about two hours' climb from the hut, I shaped my course early the next morning after a comfortable night in the hayloft. It was necessary to get to the spot at sunrise, for otherwise the chamois, who used the narrow ledges that ran across the face of the exceedingly precipitous slope only for

their night quarters, would have moved down towards their feeding ground near some snow patches beyond the base of the rock, where the ground was already in Bavaria. On getting to the top of the hill, which I did just as the sun was rising over the great glaciers of the distant Zillerthal, I found that the wind was still drawing down the slope, so the change in its direction, which usually occurs about sunrise, had to be patiently awaited. After shivering for some time in the piercing breeze, the wind at last began to shift, and five minutes later it was blowing up the slope. Only now did I venture to creep forward to the edge of the precipice, and craning over, scan the declivity below me. There, sure enough, right at the foot of the cliff, about 250 yards off, but already on Bavarian ground, was a single chamois slowly feeding away from me. My glass soon told me that it was a prize worthy of every effort, nay, almost worth turning poacher oneself. How unjust that this animal, which passed the greater part of the year on Tyrolese soil, should, because it happened to stray across an invisible boundary line, become the property of the King, just at the very time when the big royal chamois drives would, perhaps, cause him to run up to the rifle barrels of some pampered sportsman sitting on his camp-stool behind a bush, and anything but deserving the luck of bagging such a rare old buck, who was worthy of the hardest stalk man ever had! How unlucky, too, that the wind had not changed five minutes earlier, for I felt convinced that my lordly old buck had passed the night on some of the ledges within easy reach of my rifle! But these ruminations were useless, and as nothing further was to be done that day, I determined to return to the Alp-hut and repeat the experiment the following morning, when I hoped the wind would prove more propitious. On reaching the hut, I found that flaxen-tressed Moidl had returned from her errand to her distant home, and as both she and her brother knew every inch of the country I had been over, I talked matters over with them. My comment that the 'Hohe Geschnürr' was a fickle place

for wind found the assent of experience. Moidl was quite a fair cook, and as I had some time before rendered her lover, who was serving his three years' military service in the nearest garrison town, the much-prized favour of obtaining for him an unexpected leave of absence, she was, so far as the primitive means at her command allowed her, an attentive hostess, and, as the sequel proved, an energetic strategist. 'And you are sure that you will return to the Hohe Geschnürr to-morrow morning?' queried the lass as I was settling myself for a comfortable afternoon smoke at the open hearth. To my affirmative answer she replied with a smile and a nod, and soon afterwards left the hut, bent, as I supposed, on some errand connected with the guardianship of the kine in her charge, and from which she had not returned when I turned in for a second night in the hay. My start next morning was an early one, and I reached the top of the cliff in good time. Awaiting sunrise and the wind being favourable, I was soon creeping with bated breath through the low brush that grew to the very edge of the cliff, and looked down to renew my acquaintance, if possible, with the old lord of the manor. But, alas! the rising morning mist still hid the lower portion of the vast amphitheatre-shaped declivity. What wonderful effects do not those fleecy clouds produce as, drifting from pinnacle to pinnacle, assuming every minute different fantastic shapes, they finally begin to melt away, disclosing as they do so bit after bit of the details of the sublime landscape! When the base of the cliff at last became visible, I saw, somewhat to my surprise, quite a number of chamois congregated and evidently made uneasy by some sign of danger which was invisible to me; I could even hear their 'whistle.' With my glasses I soon picked out my buck of yesterday, and near him I saw a second veteran. It was much too far to shoot, so I awaited with imaginable impatience what the next move of the game would be. Slowly, with frequent stops to look back in the direction where their scent detected danger, they at last commenced an upward course which would bring them, if nothing changed

their bearing, to within fifty yards of where I lay concealed, waiting till they reached the top of the cliff—in front the leading doe, then several yearlings and two-year-olds, and last, straggling at some distance behind, the two fathers of the tribe. The latter's doom was sealed, for a minute later a right and left had added two good heads to my collection. Far over the mountains did the breeze carry the sound of my shots, and presumably more than one many-jointed German oath came as echo from the angry keepers, whose ideas respecting the ownership of those chamois were not exactly the same as those of the proprietors of the soil where the chamois lived for the greater part of the year. After brittling the bucks and hiding the larger one under some brush, I made for home with the other one in my rücksack. On my way down I stopped at the Alp-hut and sent Hans back for the former, which he was to take to the main valley the following day, an arrangement which prevented my hearing the sequel of the story, and the explanation why those chamois had come my way that morning, until some weeks later. My artful friend Moidl, it appeared, together with another girl from a neighbouring Alp-hut, had planned and had executed the following ruse. Starting long before sunrise from the latter's hut, the two girls with large baskets on their backs had penetrated by break of day into the very heart of the royal preserve, situated on the lower slopes of the peak, on the top of which they knew I would presently be posted. When the wind changed, all the chamois above the girls got scent of them, and the result was soon afterwards communicated to them by my shots. But, unfortunately for the girls, my shots also put the keepers on the *qui vive*, and before the girls could get back to the Tyrolese side a keeper had spied them and promptly arrested them. Their excuse that they were collecting medicinal roots for their cattle, and had unwittingly wandered across into Bavaria, did not help them, and they were taken down in triumph to the nearest forest-master. Fortunately, however, the judge who heard their case took a more reasonable view,

and found that there were no proofs of poaching or of abetting poaching, and after a brief confinement they were set at liberty.

RIFLES AND KIT

Tyrolese, Swiss and German sportsmen, as a rule, use only single-barrelled rifles, and much smaller charges than are used out of English Expresses ; indeed, in some royal shoots the use of double-barrelled rifles is against local etiquette. Thus the Emperor of Austria, one of the keenest sportsmen born, never uses other than single-barrelled arms, and his guests are expected to do the same. The reason is a good one—namely, to discourage wild shooting at long ranges, causing numbers of chamois to be wounded, many of whom escape only to die in places where they never can be got at. To a person who is accustomed to shoot at long ranges and who knows exactly what the rifle in his hands can do if held steadily, the shoulder of a chamois standing at two hundred yards is not, as most German sportsmen will insist on, an impossible mark ; but of course practice and fine sights on a really accurate weapon with the necessary steadiness of aim are essential to accomplish it. A hinged peepsight behind the hammers, which turns down when not required, or a Lyman sight, is a desirable aid for fine shooting, provided one is accustomed to its use ; and the same might be said of hair triggers. A peepsight of my own invention, which has been copied by some who have seen it, is constructed so as to fold down when not in use, fitting into a recess of exactly its shape. Its chief merit is that when not required it is invisible, and when required the pressure of the thumb against a tiny knob (the size of a No. 1 shot) behind the right hammer releases a spring, and the sight jumps into position, and without requiring any further adjustment is ready for immediate use. Messrs. Holland & Holland, of New Bond Street, have built me an excellent rifle with this sight. To the question which is the best rifle, the reply may safely be given : a light ·450 Express, with a sling to carry it in the Con-

tinental fashion, which latter leaves one the free use of the hands and arms for climbing. For all ordinary purposes in driving and also in stalking chamois the solid bullet should be used, for the disfiguring effect of the hollow bullet at short ranges on such comparatively small game as chamois is to be avoided, and in many shoots there is a standing rule against them. For stalking, when one is alone, and a wounded chamois is likely to baulk one's best efforts to get it, the hollow bullet has certain advantages, for wounded game succumbs as a rule much sooner, and it is also much more easily tracked. Considering that the hollow and the solid bullets have very different trajectories, the promiscuous use of both out of the same barrel is fatal to good marksmanship.[1]

Good field-glasses, preferably of aluminium, being much lighter than other metal, are quite indispensable, and are better than telescopes in the hands of all but the most experienced, for they give a much larger field and can be used more constantly. Chamois, particularly early in the season, are, on account of their dun coats, hard to see against a background of rocks, and, even with some practice in knowing where to look for them, a close scrutiny is necessary. 'Steigeisen,' or crampons, are most useful when once one has become used to them ; to the tiro they are, however, often a source of danger, and in really bad places when stalking alone bare feet answer the same purpose. The already mentioned 'rücksack,' or Tyrolese game-bag, is the stalker's best friend, not only in the Alps, but in any part of the world for rough work. It is a bag of canvas, with two broad leather straps to pass the arms through. Its lightness—it weighs only a few ounces—and extreme simplicity are advantages apparent to everybody who has used it once. When empty one can put it into one's coat-pocket, and when required one can carry in it a roebuck or chamois in the manner least fatiguing, for the weight is

[1] This difficulty the writer, after years of experimentalising, has overcome by using the hollow exclusively out of the right and the solid out of the left barrel of a rifle built expressly for this purpose.

distributed between the shoulders and the small of the back, leaving the arms and muscles perfectly free play. The writer has used them for years in the Rockies, and the alacrity exhibited by the Indians in one's employ in taking to them in lieu of headstraps and crossbands showed that there was one improvement that the old world could show the new one. A well-known writer on sporting subjects not long ago, when recommending this bag to young shooters, stated that it was originally introduced by a gentleman in Carlisle. If so, it must have been a good many years ago; for the Prince Consort used them in Scotland from the first year he shot in the Highlands, and the writer's father used them in the Highlands forty-five or fifty years ago. In Tyrol it has been in use for at least four hundred years, for we see it in prints of Maximilian's day. As for clothing, the best nether garments for really rough work are dark-coloured chamois leather breeches, reaching to the knee, leaving it bare, with worsted stockings long enough to reach well over the knees in snowy weather. Ordinary woollen knickerbockers will not stand many hard days of chamois stalking in a limestone formation; in fact, the end of the first stalk will probably find them seatless.

CHAMOIS DRIVING

What has been said will show that, to become a successful stalker, practice and early training in mountain work are, if not absolutely essential, at least very desirable, and even the possessor of these advantages has cause to pray for perpetual youth. As years roll by, even the keenest stalker gradually becomes more and more reconciled to the assistance afforded by beaters and other extraneous aids to outwit this wary game, and more and more satisfied with the buck carefully picked from the band as it rushes past one's post in headlong flight, or in cutting short the earthly career of a tricky old veteran whose oft-repeated practice of sneaking through the line of guns unobserved was attempted once too often.

The following account of a 'Treibjagd' in the Duke of Saxe-Coburg's famous preserves in the Hinter Riss in Tyrol will give a comprehensive picture of driving chamois at its very best.

In this vast preserve, consisting of a great strip of mountain country, a very sea of jagged ranges, stretching from the Inn Valley to the Isar, driving is made a fine art, the experience of fifty years assisting to no little extent the efforts of as fine a staff of keepers as can be found in the Alps. Sport can be obtained there with a luxurious ease that is in striking contrast to the hard fare and rough times usually the lot of the stalker. To drive chamois over an exceedingly rough country in a given direction is a very much harder task, however, than appears on the face of it. Take a tract of mountains, the selection for that day's drive, five or six miles square, connected with adjoining ranges by numerous passes by which the wary game can easily escape; take the extreme uncertainty of the wind in these elevated localities, now blowing in the desired direction, now suddenly veering round, carrying the alarm for many miles to the keen-scented game, and undoing in one minute the most carefully planned manœuvre, and it will be realised how many obstacles and contingencies, often of the most unforeseen nature, must be provided for to make a drive successful. Where such large areas have to be surrounded a whole army of beaters would not suffice to keep chamois in the drive, and the 'lappen,' or flags, one of the most important aids on such occasions, have to be employed. These consist of many miles of strong cord to which at intervals of every four or five feet bright-coloured pieces of linen about the size of a pocket-handkerchief are fastened. These cords, resembling a laundry line hung low, are drawn on two sides of the tract to be driven, and are kept in position about three feet from the ground by rods firmly fastened into the rocks. Swayed by the breeze these flags wave to and fro, and under ordinary circumstances serve their purpose of preventing the chamois escaping that way. As a rule they are strung along the knifeback backbone of the mountains to be enclosed, jagged ridges peculiar

to a limestone formation, where apparently only flies with glue on their feet could find a footing. Great care has to be taken in stringing these cords, as the ever-busy breeze makes simultaneous action necessary; and even then, when everything appears to work like clockwork, some hitherto unknown gap in an apparently perfectly impassable wall of rock will afford escape, for where one chamois can get the whole band will follow, and the day prove a complete failure.

Along the narrow glenlike valleys that intersect the Duke's vast shoot he has constructed, so far as the ground permitted it, carriage-roads, and up the precipitous slopes, where practicable, carefully laid out bridle-paths wind and twist, enabling elderly sportsmen to reach the vicinity of their 'stand' or post on the backs of sure-footed mules or mountain-bred ponies. Leaving the central shooting-box, a charmingly situated little Gothic castle reminding one of a miniature Balmoral, at the comparatively late hour of 7.30 A.M., the four Hungarians take the break in good time to the furthest extremity of the valley which in its higher recesses is to be the scene of the day's drive. Quitting the vehicle where the precipitous slopes begin to rise at an angle that makes the construction of even a bridle-path a matter of some difficulty, the genial host and his principal guest mount sturdy cobs, while for some of the more elderly guests mules are provided, and without loss of time the party, followed by eight or nine of the keepers, begins the ascent. The latter are fine stalwart Tyrolese, clad in their picturesque native dress: grey frieze jackets, black chamois leather knee-breeches, and greenish-grey worsted stocking-like leggings, leaving bare both the knee and the foot, which, where visible, are tanned to a mahogany hue; low heavily nailed shoes protecting the stockingless feet. For two hours we continue to ascend, presently reaching timber-line and the crest of the ridge, from which we obtain our first view of the scene of the drive. Here the riders dismount, for the remaining mile to the posts has to be done on foot, and as noiselessly as possible. The ground selected for that day's drive consists of two vast semicircular

'Kaare' amphitheatre-shaped declivities two miles across, the sides being formed by steep moraines ending in great cliffs, a thousand or fifteen hundred feet in altitude. Along the jagged top of these walls one can see with one's glasses the string of flags which were put up early that morning. The drive is to begin sharp at 12 o'clock, and as the beaters, some forty or fifty in number, are far beyond the furthest limit of the drive on the other side of the flagged ridge, punctuality is very necessary. Each of the four guests has allotted to him a keeper, who conducts him to his 'stand' or post, and as we part the German contingent wish each other the usual 'Weidmansheil,' sportsman's luck, as prescribed by ancient custom. The drive is one of the longer ones, lasting between four and five hours, so the softest looking rock is selected for a seat permitting of a good view of the whole scene, and a layer of pine branches gives increased comfort. By the time the signal shot, which is echoed and re-choed from precipice to precipice, warns the guns of the beginning of the drive, some luncheon has been disposed of, and if the wind permits it, even a cigarette can be indulged in without danger.

The result of the day would be very different were the breeze even at this late hour to chop round, for no power on earth can drive chamois into the teeth of a danger-tainted breeze; but this fortunately does not occur, and we can watch the drive from our point of vantage, and follow the details of it at leisure. On two small snowfields lying well under the cliffs we can see small black specks. Closer examination with the glasses discloses two bands of chamois each some twenty in number; some are lying on the snow, others, mostly kids, are frisking about, the whole lot, till they hear the signal shot, being quite ignorant of the impending ordeal. Very rapidly does the scene change when the first alarm strikes their ears. The frisky kids, which a second before were playing about, now press against their respective mothers' sides, while the older animals have jumped to their feet with amazing rapidity. Misled by the echo as to the direction

whence the sound really came, they dart hither and thither, unable to make up their minds whither to flee. The next minute the bands separate into several groups, each under the leadership of a doe, who select different routes, each of which, however, will in the end probably bring them to the guns, though some sooner than others. The plan of the drive depends greatly upon the lay of the ground. In many cases the line of beaters, from twenty to fifty in number, is drawn from the bottom to the top of the mountain, and then at a given signal the whole line works along its flank. The crest of the ridge is flagged off and so is the bottom, if it is at all likely that the chamois will attempt to break through in that direction. The fourth side is occupied by the guns, and if there are not enough to stop the gaps and passes, short lengths of flags are strung between them, or keepers are posted who, when chamois approach, show themselves and cause the game to turn back into the drive, and try for some other place of escape till they finally come to one of the guns. In other drives the two side lines of flags are curved inwards till the extremities almost meet, and that is usually the best post; for chamois on getting to the 'lappen' turn one way or another, dashing along the flag-line till they reach an opening. In other places, again, where the mountains are very steep, and a large area has only three or four possible outlets by which the game can get away, flags are almost unnecessary, for the beasts must come by the passes, or 'chimneys,' or ledges, which of course should all be well known to the keepers, who make the configuration of the ground their special study. But only too often the amazing climbing powers of the chamois will at the last moment upset all the well-matured plans, and the hard-pressed animals effect their escape by some hitherto unknown ledge, or by a series of leaps down perpendicular heights that make the onlooker hold his breath with astonishment. Speaking of the wonderful climbing feats, space may be given to one or two actual measurements. Tschuddi's eminently trustworthy figures are the following: a chasm on the Monte Rosa

jumped by a chamois measured 21 feet, while a perpendicular wall, 14 feet high,[1] was jumped by a semi-tame chamois frightened by a dog; and the writer has measured a vertical depth of 24 feet, down which a wounded buck cornered by a bloodhound unhesitatingly ventured to leap without injury to himself. When in their flight suddenly coming upon the flag-line chamois will not always turn to one side or leap clean over it, but will sometimes boldly charge the bunting, and if the cord is not too old and stands the strain, the result is a chamois violently flung on its back. In a few instances they have been known to get entangled in the cord and strangled to death.

A somewhat singular and ludicrous result of such a charge once occurred to me, and may be worth repeating. It happened at a drive in the Hinter Authal, Prince Hermann Hohenlohe's excellent preserve in Tyrol. There being but three guns present, flags had to be used between the posts. I was posted on a rock at the bottom of a steep and high slope of loose stones stretching many hundreds of feet upwards; my range of vision and of fire being unusually confined in every other direction. Two shots fired in rapid succession by my host, who was the nearest gun above me, put me on the *qui vive*, and not needlessly, for there, flying down the slope, bounded a chamois straight for my post. The Prince's *coup double* had knocked over the companion buck, and the frightened animal was travelling at a terrific pace. On getting closer I observed, to my utmost surprise, that to one of its horns was attached what appeared to be a scarlet handkerchief, which fluttered like a pennant in the air as the animal pursued its headlong flight. The fluttering rag made it impossible to determine by its horns whether the animal was a buck, but its large size, strongly formed neck, and whole appearance confirmed me in my belief that it was a buck. On it came with the speed of a ricochetting cannon-ball straight down towards me, and would

[1] The Editor is not responsible for the measurement of this jump. He assumes that it was measured by the gentleman named, and on his authority it is printed.—B.

have passed me within a couple of yards had my rifle not ended almost *à bout portant* the days of what, on going up, turned out to be an old and unusually large barren doe! It afterwards appeared that several beaters had seen her in her wild flight dash against the 'lappen,' which were new and strong, and after turning a double somersault and being flung on her back, dash away with one of the red rags, pierced by one of the horns, fluttering from her head. What made the matter worse and earned me some chaff, was the fact that it was my hundredth chamois, and I had only a few hours before expressed the determination that it should be a buck and not a doe.

Chamois, to return to our drive, pursue different tactics when driven. Old bucks—and they, of course, are the special object of the ambitious sportsman—as a rule, try to steal away at the first sign of danger, after having from some prominent crag thoroughly inspected the whole ground. These wary old fellows proceed very cautiously: every ravine is carefully scanned before it is crossed and every couloir narrowly inspected, lest danger be lurking behind some rock or boulder. If the guns are posted on exposed points, good cover, and as perfect immovability as it is possible to maintain during a three or four hours' drive, is advisable if nearer acquaintance with these old stagers is sought. Often has the writer watched old bucks approach and inspect some restless and fidgety gun, who, because he could not see any chamois, imagined no chamois could see him, than which no greater mistake can be made. Bucks will often stand for an hour at a time perfectly motionless, fixedly regarding some point to which their attention has been attracted. The does and younger generation of bucks are more easily startled than the fathers of the tribe, and they generally approach the guns in full flight, testing the nerve of the sportsman to a high degree, for it is no easy matter to pick out males under these circumstances. On the occasion I am endeavouring to describe, some ninety or a hundred

beasts are in the drive, and soon the easily distinguishable right and left of the Duke's Express are awakening the echoes, and as the fleeing band, after leaving two victims behind, dashes down the flag-line, the turn of the other guns comes too. About one o'clock another distant signal shot tells one that the beaters have reached the top of the flagged ridge from the back, and now we can see them clearly outlined against the sky. They remove the 'lappen' before beginning their exceedingly perilous descent down the face of the cliffs—a most desperate looking undertaking, which one watches with bated breath. Some seven or eight chamois trying to escape by a ledge up the face of the cliff reach the top from one side just as the beaters do the same from the other, and to see them wheel about on a band of rock only inches wide and dash down, leaping from projection to projection, startlingly exhibits their wonderful surefootedness. My turn comes by-and-bye, when an old stager, whom I have been observing for some time, makes up his mind to escape by the pass my 'stand' commands. Stealthily and carefully winding at every stop he makes, he slowly comes up towards the only remaining point, whence as yet no thundering note of warning has issued, and I am glad that I let the small fry which shortly before dashed past me do so unmolested. It frequently occurs that a sacrifice like that at the beginning of the drive is finally thus rewarded. In this instance, a second old buck an hour later is also fatally misled as to the safety of the route I am guarding. Soon after four o'clock the drive is over, sixteen chamois forming the 'Strecke,' as a very ancient custom of venery, i.e. the placing in a row of the day's bag, is called. A stirring and picturesque sight it is when all assemble at the meeting-place, usually some bit of Alpine sward where sportsmen, keepers, and beaters mingle in eager discussion of the chief events of the day, and every head is carefully examined. To an active climber, joining the beaters under the guidance of a keeper is more exciting work than sitting for hours in one spot and potting driven chamois;

but this, like stalking, no tiro should venture on, and permission to do so is often difficult to obtain.

As some adjoining country is to be driven on the morrow, the night is passed in one of the many delightful shooting-boxes, simply furnished chalets with wainscot interiors, dotted about on the timber-line regions of the Duke's shoot. The entire month of October is thus devoted to driving, and never is ground beaten twice the same year, so that some idea can be formed of the extent of the shoot. Fine weather does not always, however, attend these occasions, for October in the Alps can make itself very disagreeable, with snowstorms and fierce gales that drift the snow in great heaps round one on one's post, turning one's body into an icicle, and cramping the fingers, so that aim at even the shortest distances, as the mistily outlined game flits past one in the driving snowstorm, becomes strangely uncertain.

In conclusion, a hint or two to those participating for the first time in a large drive may be of use. In the first place, if not expressly told to the contrary, it is wiser not to open the ball by firing the first shot. Such a premature warning may possibly spoil the whole laboriously laid out drive by causing the chamois to break back at a moment when the beaters have not yet been able to reach those points where their attempt could be frustrated. The writer has known more than one instance when a big shoot, which otherwise might have been entirely successful, has been spoilt by a shot fired very soon after the beginning of the drive by an impatient gun.

Another and last hint is always to find out from the keeper who posts one, not only the exact position of the next guns—information he usually volunteers—but also, if they are invisible to one, the limits of one's own field of fire. Nothing is more disagreeable than at the end of the drive to find out that, by shooting perhaps a little further than was expected, one has shot beasts really belonging by all rules of venery to one's neighbour. Such an oversight, arising from ignorance respecting these limits, once caused the writer

on the occasion of a formal Court *chasse* very painful embarrassment by tempting him to fire at and, as bad luck would have it, also hit, at somewhat long range, four good bucks, which at the time—of course, unknown to him—were much closer to his neighbour, an exalted English personage, and which bucks, to make it worse, were the only chamois the latter saw during a long day's drive. The consternation of the dumbfounded officials, when they discovered the result of their negligence in failing to give the necessary information, was lamentable to behold till the amiable prince very good-naturedly made light of their awkward oversight.

HISTORY OF THE CHAMOIS AND ITS CHASE

Marvellous stories of the chamois's wily artfulness in evading the hunter have from time immemorial been told. For instance, that when cornered by its pursuers it would hang itself by the crook of its horns from ledges overhanging deep precipices to evade the hunter's ken. As late as forty years ago, absurd nonsense was still being written about the chamois. Thus an English author gravely quotes: 'The chamois hunter rarely shoots his game, but drives it from crag to crag till further pursuit becomes impossible, when he draws his knife and puts it to the side of the chamois, and the animal pushes it into its body of its own accord!'

To the chamois' blood valuable medicinal qualities were for many centuries ascribed, and the healing properties of the famous 'Bezoar stone' (Ægagropilæ) have been vaunted and written about by numerous authors from Pliny to Lelwald. This ball-shaped secretion, consisting of resinous fibres and hairs, is occasionally found in the stomach of very old bucks, and is really the result of the unnatural contraction of the muscles of the stomach, which in the chamois consists of four much more distinctly separated divisions than is usual with other ruminants. Up to fifty years ago these stones (which occasionally reach the size of a billiard-ball) fetched their weight in

gold, and they were considered specifics for half a dozen deadly ills, among them 'the loss of one's intestines,' as Pliny calls a malady which it is to be hoped has since disappeared.

In the Middle Ages, before the invention of gunpowder, the

Emperor Maximilian I. chamois hunting A.D. 1500 (from 'Theuerdank')

chase of the chamois must have been infinitely more arduous than it is to-day. They were usually stalked, and were killed either with the cross-bow or with spears thrown like javelins. These were shafts 9 ft. long with thin tapering lance points,

and a skilled man could throw them with fatal effect a distance of forty steps. The great mediæval sportsman, Emperor Maximilian, has left us some quaintly worded descriptions and pictorial representations of chamois stalking and its dangers. He was undoubtedly the first to use the unwieldy 'fire-tube' weighing 20 or 22 lbs., with its forked prop and fuse which was carried in the hand, and which had to be lighted with steel and flint before game hove in sight. The only bit of advice smacking of our own luxury-loving much-beservanted sport four centuries later, is the quaint remark of the royal sportsman: 'that it is a convenient thing to have at one's side a trusty man with good lungs to keep the fuse alive.'

CHAPTER VII

THE STAG OF THE ALPS

BY W. A. BAILLIE-GROHMAN

THE red deer to be found on the Continent of Europe can, broadly speaking, be divided into two families: those inhabiting the more or less isolated forests on the great plains of Central and Northern Europe, and those making the mountainous regions of South-Eastern Europe, chiefly in the Austro-Hungarian Empire, their home. Whilst it is not always easy to draw a topographical line of demarcation between plains and mountains, this broad subdivision has a great deal to do with the explanation of the fact that the mountain stag has, in the course of the two or three last centuries, deteriorated less than has the stag of the plains.

The retrogression of the latter has been much greater than is generally supposed, and it is not till one has investigated the abundant evidence placed at the disposal of those having the necessary opportunities for research that the vast decrease in numbers and deterioration in the size of the animal and of its proud trophy are brought home to one. Months of interesting study are afforded by the perusal in German archives of the shooting diaries of the sixteenth and seventeenth centuries, a period when, as is well known, the love for the noble art of venery swayed the great territorial lords and potentates of Germany, France and Austria to an all-absorbing degree of which it is difficult to form a correct idea in these days of responsible government. Such study of old diaries, kept as a rule with far

greater punctilious care and method than was bestowed upon the most important papers of state, brings to light narratives of sport and details about the animals themselves which make comparison with the puny forms, shrunken number, and dwarfed antlers of to-day a matter of suggestive interest. To cite only one instance: is it not startling to read that the Elector of Saxony killed in forty-five years (1611 to 1656)—during which, we must not forget, the Thirty Years' War was ravaging Germany—no fewer than 47,239 head of red deer, of which 24,563 were stags? Amongst them there were:

1	stag of	thirty points	24	stags of	twenty points
1	,,	twenty-eight points	131	,,	eighteen ,,
1	,,	twenty-six ,,	373	,,	sixteen ,,
3	,,	twenty-four ,,	1,192	,,	fourteen ,,
9	,,	twenty-two ,,			

whilst as to weight the following figures tell their own story: the heaviest stag (killed somewhat early in the season, August 17, 1646), weighed 61 stone 11 lbs., fifty-nine stags exceeded 56 stone, 651 exceeded 48 stone, 2,679 exceeded 40 stone, and 4,139 exceeded 32 stone. It is interesting to compare with these figures the bag of the descendant of the above potentate—i.e. the late Duke of Saxe-Coburg, an equally keen sportsman, with opportunities, in comparison, much the same as his great ancestor. He, as we find from compilations placed at the writer's disposal, killed in forty-nine years (1837 to 1886) 3,283 red deer, of which 2,316 were stags, and of these there were one of 24 points, two of 22, four of 20, eight of 18, and 164 of 16 and 14 points; whilst in respect to weight, the best forests of Germany did not return a single stag equal to that of the lowest in the Elector George's list, i.e. 32 stone. If deterioration continues at the same rate, the descendants of the Duke of Edinburgh, who has now succeeded to the throne of this doughty race of Nimrods, will have to be satisfied with stags of proportions akin to those of the dwarf

deer of other continents, which a strong man can hold out at arm's length.

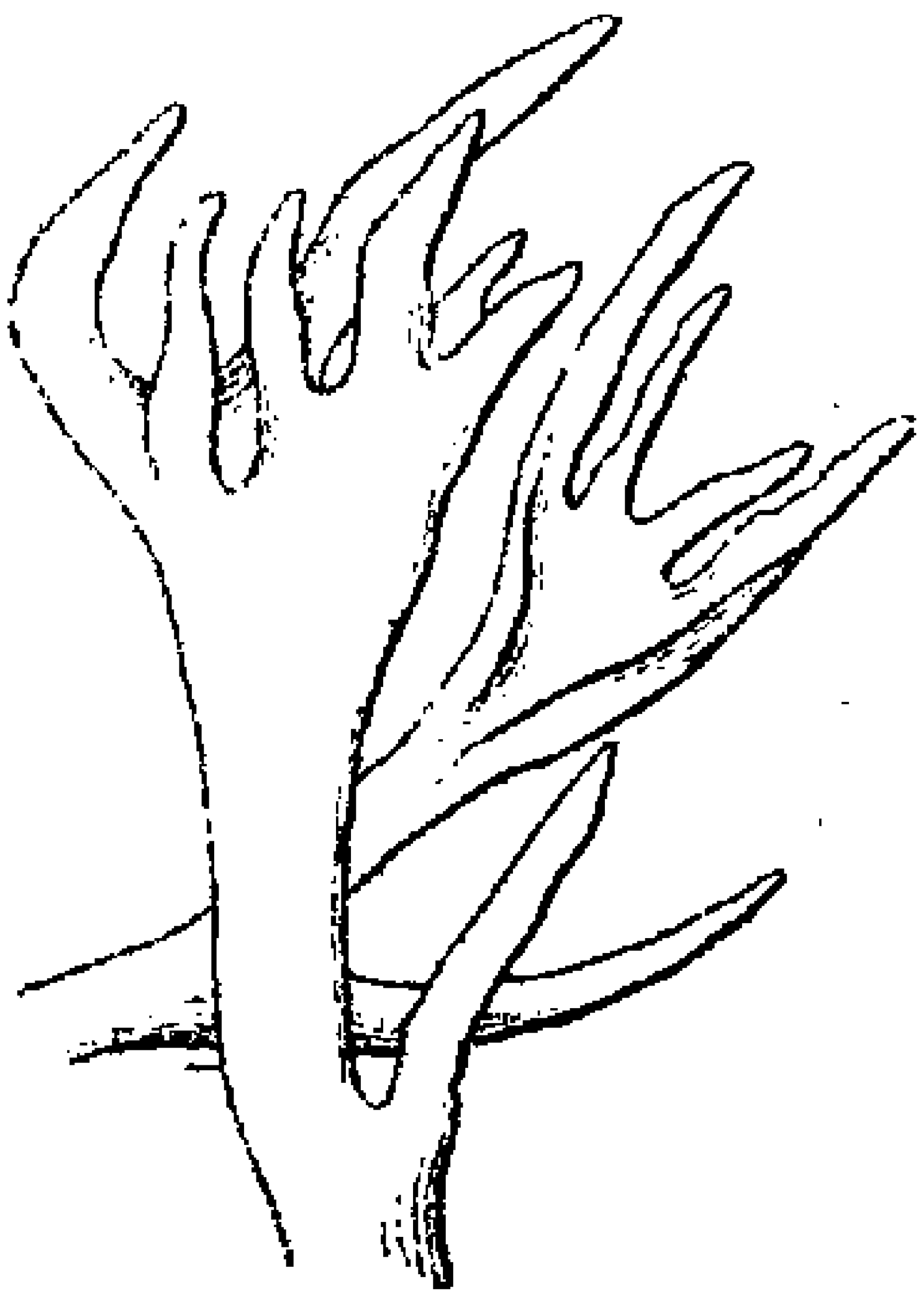
Such deterioration as the above has not occurred with the mountain stag, for we find that in Northern Hungary and adjacent Bukowina giants of the red deer species, ranging in weight from 35 to 40 stone (clean) are obtainable to this day, while their heads, if not exhibiting such an abnormally large number of tines as those to be found in the great historical collections of antlers of the Continent, where heads up to 66 points are to be seen, are nevertheless as heavy in the beam and as wide spreading almost as the best which the sixteenth century produced. Moreover, one must not forget when examining these famous old collections that they represent a zeal in sport and, in most instances, a lavishness almost incomprehensible in these modern utilitarian days; a lavishness which in many instances wrecked the finances of the ruler and of his country. History tells us that one enthusiast gave a full battalion of his tallest grenadiers for a single pair of antlers two centuries ago, while another offered a sum corresponding to 5,000*l.* for another famous head, and offered it, moreover, in vain. These are two instances of what perhaps to our remote descendants may possibly not seem a more extraordinary proceeding than the purchase of a few square feet of painted canvas for fifteen times that sum.

If we search for the reason why the stag of the plains has lost so much more ground than his brother from the hills, we come upon the same factor which has worked so much havoc in Scotland, i.e. inbreeding. The forests of Central and Northern Europe (often tracts of enormous extent) were nevertheless much more isolated from other breeding grounds than is the whole system of the South European Alps, where nature has always provided fresh blood with far greater regularity than could possibly be the case in detached forests.

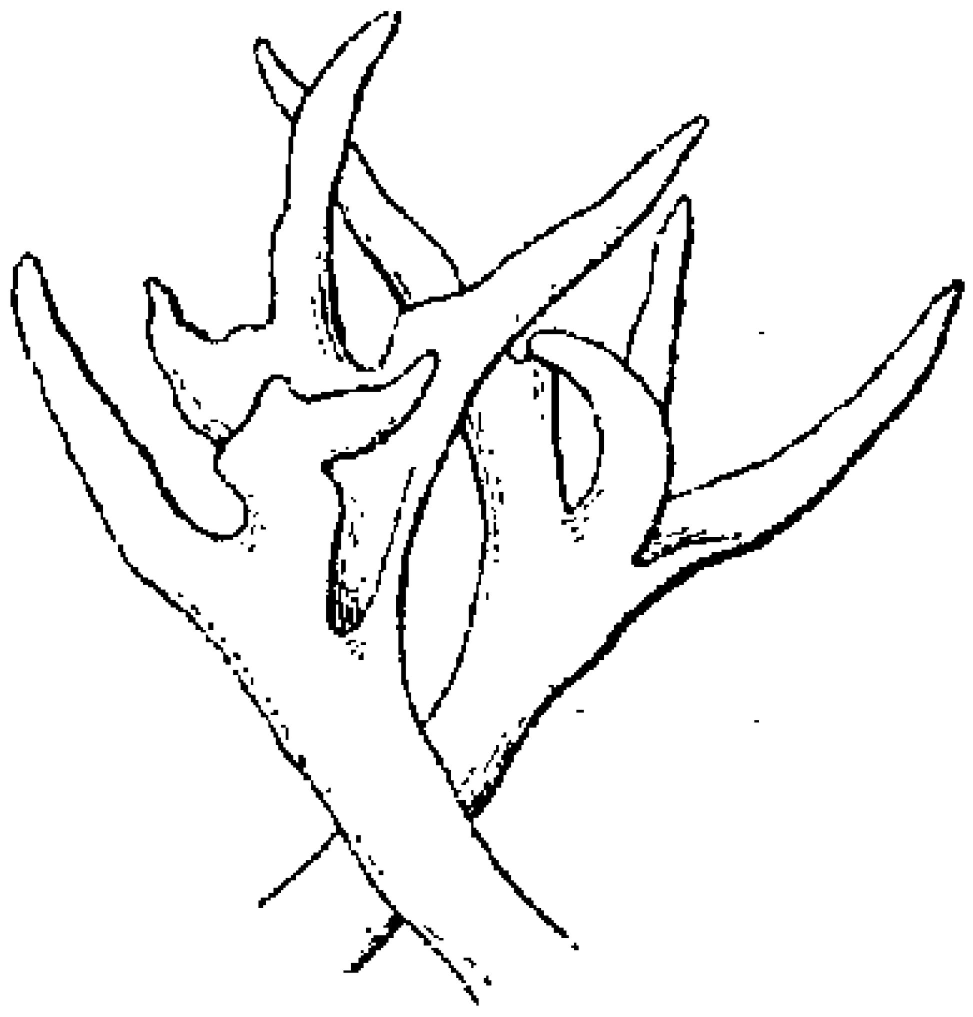
To-day by far the largest heads and heaviest stags are to be found in the mountainous regions of Northern Hungary, where are situated many great sporting estates of the Austrian aristo-

cracy, which afford sport such as is probably to be found nowhere else in the civilised world.

Confining himself to the bags of the last ten years or so, the writer can give the following details. The heaviest stags of all are shot at the famous Munkacs estate of Count Schoenborn, in the Carpathian Alps, where stags with a clean weight of 40 stone 8 lbs. have been killed in the last decade. Their heads are, however, so it is generally averred, not better than those of stags in the adjacent Pilis Mountains and other regions in the Carpathians. The accompanying sketch (No. 1) is an accurate representation of the upper part of a pair of antlers



No. 1



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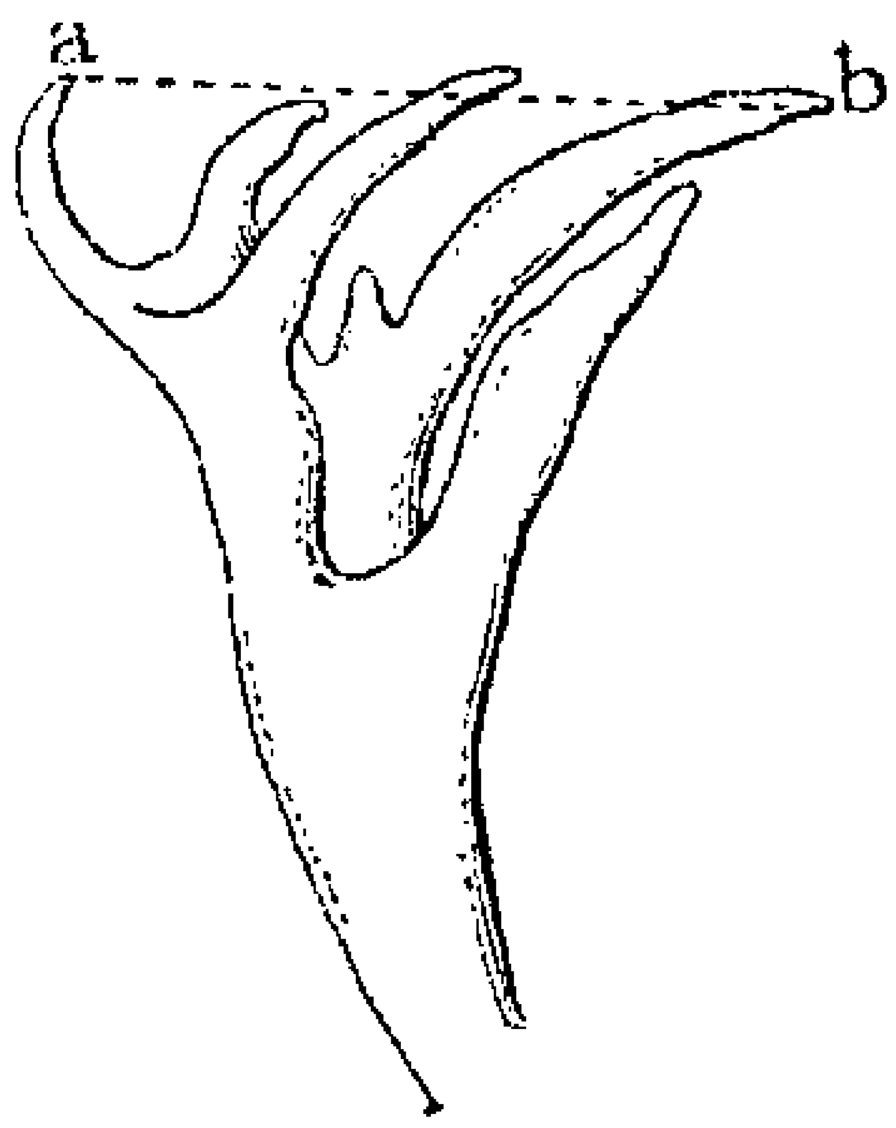


No. 3

of a stag killed at Radauc in 1882 by Prince Rohan; they are of the following very remarkable dimensions: length of right antler $49\frac{6}{10}$ ins., of left antler $48\frac{4}{10}$ ins. No. 2 sketch represents antlers of a stag shot in the Pilis Mountains in 1884 by the present Duke of Ratibor, the right antler measuring 49 ins., the left $50\frac{4}{10}$ ins., while the spread from tip to tip at widest point is $55\frac{9}{10}$ ins. This is enormous. The remarkable expanse of the crown of a stag shot on the Jolsva estates (Hungary) in 1884 by Prince Philipp of Saxe-Coburg Gotha is shown in sketch No. 3, where the extreme distance between the two most prominent tines forming the crown *a* to *b* tapes $20\frac{9}{10}$ ins.

Frequently, as everybody who has dipped into antler lore well knows, the largest heads, so far as length and number of tines go, are not the heaviest in weight; in fact, one might almost quote as a rule that the heaviest heads are fourteen and sixteen tined ones, when the animal has begun to set back. Thus neither No. 1, 2, nor 3 reaches, by 4 lbs. or more, the weight of a 14-pointer killed by Prince Rohan in Radauc, which, with the small fragment of skull-bone which is usually left attached to the antlers, exceeds that of many a fair wapiti head—the giant of the deer species—scaling an ounce or two over 31 lbs. avoirdupois; whilst another 14-pointer, obtained by the late Austrian Crown Prince, weighed little less. To find matches for these modern antlers among old historical heads one has to search among the pick of the old collections, and of these history does not always tell their origin. Take, for example, two famous collections embracing between seven and eight thousand heads, i.e. the historically most interesting 'Sammlung,' at the King of Saxony's castle of Moritzburg, where, in one of the many halls in which are hung these highly treasured trophies of the sixteenth and seventeenth centuries, the visitor can see 71 heads, not one of which carries less than 24 points; and, secondly, Count Arco's numerically even finer collection at Munich. The pick of both collections is in the first named—i.e. a head of the unrivalled spread of 6 ft. $3\frac{6}{16}$ ins., and of the equally remarkable weight of 41½ lbs. avoirdupois. The history of most of the lesser heads in this collection is well known; not so unfortunately the origin of these monster antlers. In spite of many weeks' researches in the King's private library and in the Royal archives to which the writer obtained access, it was impossible to trace its history further back than 1586, in which year the head is enumerated in an inventory of the Elector Augustus's heirlooms, without mentioning whence it came.

Returning to modern times, it must, of course, be remembered that in the localities producing the monster stags of to-day everything is in their favour. In the oak forests on

the lower slopes of the mountains they find a mild climate and the best horn-producing food during the winter months, while during the summer they make undisturbed raids upon the rich agricultural valleys below, where they find the wherewithal for many a stone of extra weight, the feudal sway exercised by the great territorial magnates permitting the deer to trespass upon the crops with impunity, and thus grow to be the lustiest of their race. In the higher Central Alps, in Styria, Tyrol, and the Bavarian Highlands, the stags are smaller and their antlers shorter and proportionately less massive, being about the size of the best Scotch heads. In the Alps the inclemencies of severe winters, lack of food as well as lack of shelters, tell upon the growth of the whole race.

In other respects, however, the stag of the true Alps is a grander beast than his lazier and sleeker brother to be found on the slopes of the Carpathians. Scarcer, far harder to obtain, amid surroundings not unsimilar to those which make chamois shooting such keen sport, stalking the Alpine stag has for those who are fond of real mountain sport more attractions than the pursuit of the larger and less wily Hungarian stag.

STALKING THE ALPINE STAG

The home of the Hungarian and of the Alpine stag differs very materially from that of the Scotch deer. The more or less treeless 'forest' of Scotland is replaced in the first named locality by superb woods of deciduous as well as of coniferous trees ; in the latter by dense pine, fir, and larch woods. These are forests which do not belie their name, and their owners are never forced to kill off stags in order to save a few precious trees, an unpleasant alternative by no means unknown to Scotch lairds.

To the presence of these forests must be ascribed the entirely different mode of stalking pursued in Austria from that known to the Scotch deerstalker. The view over great expanses of open hill land, which is the most typical incident of Scotch sport,

is practically unknown on the Continent. In consequence of this, stalking can only take place at a season of the year when the stag betrays his whereabouts by the call or roar he emits at rutting time.

The rutting season of the Alpine stag varies triflingly, but as a rule it may be said to begin about September 25, and to end on or about October 10 or 15. Prior to that time, from the moment when the stag's antlers are clear of velvet, he is literally unapproachable in the dense thickets he loves to frequent at this period. Though necessarily a high feeder at this season, during which he has to lay up a goodly stock of fat for the exciting and exhausting times of the rut, he nevertheless comes out to feed only at night-time, and he hears as well as scents danger afar. So suspicious is he that, as an old proverb says, 'he flies from his own shadow.' To stalk him under such conditions in a densely timbered country is, of course, hopeless; so that his chase during August and the first half of September can only be successfully achieved by driving the forest with beaters (dogs, except for tracking wounded game, being of course very much out of place), and this driving is considered but poor sport by those who have an opportunity of killing the same animal by stalking a few weeks later.

In this stalking, the call of the stag plays a principal part. Unmelodious as is this hoarse challenge for the virile championship of the herd, it is a glorious sound to the ear of the sportsman. Whether heard in timber-line regions of the Alps, or in the tangled depth of German or Hungarian forests, or in the elevated uplands of the Rocky Mountains, it has about it as true a ring of sport as the first music from the pack in covert.

In stalking the Alpine stag during the 'Brunft,' as the Austrians call the rutting time, in forests that are strictly preserved, the assistance of keepers saves much time which otherwise would have to be expended by the sportsman in discovering the favourite locality frequented by the stags. Stags when the instincts of the season are full upon them are 'up and

doing' all night, and the concert made by four or five (and often many more) brave warriors within earshot lasts all night, only to die away as darkness is replaced by daylight.

On clear nights, favoured by a bright full moon (other conditions being equally propitious), it is possible for a skilful stalker to get up to within a score of yards of a calling stag, close enough to fire with a good chance of hitting the beast. A smooth-bore, to which one is well accustomed, firing a spherical 13-bore ball, is for such occasions preferable to a rifle with its fine sights, and as a rule less perfect 'fit' for such hazarding. To a novice unaccustomed to this kind of midnight sport a few practice shots at a dummy should precede actual trial, for distances on such occasions are sadly deceptive, and it is remarkable how much of beautiful Nature there is to be hit in the immediate vicinity of one's would-be prey.

Ordinarily the sportsman does not begin the stalk (during the rut) till just before the break of day. He has to be on the spot at the first signs of dawn, and therefore it is very advisable to pass the night as close to the scene of the stalk as possible. In most preserves small log huts of the most primitive kind are built expressly for this purpose high up on the mountains close to timber-line, and if possible close to some prominent point of rocks or shoulder of the mountain whence the slopes below on both sides can be, as the Germans say, 'overheard.' What glorious solos, duets, and trios can the lucky stalker not hear on such occasions, when nought but those weird sounds breaks the great solemn silence of night on the elevated Alpine timber-line regions! And how eagerly does one's ear follow those sounds as they draw nearer or grow fainter, as the champions, bent on war and love, roam hither and thither on the great pine-clad slope lying in solemn silence at the feet of the midnight watcher!

The rutting stag, ardent with virile passion, is singularly heedless of danger at this season, and were it not for the hinds, who at this period appear to redouble their vigilance, he would be comparatively easy to stalk. In nine out of every ten

unsuccessful stalks it is safe to say the failure is attributable to the watchfulness of the hinds, an experience which, it is perhaps needless to say, is by no means confined to the red deer of Europe.

With the exception of a few days at the height of the rut, stags only 'call' or 'roar' at night-time, and during the early hours of the morning. Not every rutting season affords the same chances for sport. What in the sportsman's eyes is a good season is marked by its briefness, say ten days, and by a corresponding intensity of its peculiarities. In such seasons, the stag that roars one night at a certain place will, if not disturbed, make himself heard in the same locality the next night. In bad seasons, usually on account of unseasonably warm or wet weather, the stags roam further afield, and 'roar' far less regularly, the impelling instincts being apparently less violently aroused. In such cases they will continue the rut fully ten days longer, but far more intermittently than in the former.

The favourite rutting-places, or 'Brunftplätze,' of the Alpine stag do not appear, so far as surroundings are concerned, to be subject to any particular rule. They are generally well up on the mountains, not far from timber-line, and ordinarily on clearings or park-like openings of a marshy character, such as often are to be found on the small watersheds separating the headwaters of two glens.

Finally, to speak about the sport itself, it is safe to say that next to chamois stalking it is the keenest sport obtainable on the Continent. Being less uncertain and less riskful, for there is no climbing about it, it is more attractive to the ordinary sportsman, and it leaves perhaps quite as pleasurable memories in the minds of even the most ardent of Nimrods.

Given a fairly well-stocked forest in one of the picturesque regions of Styria, Salzburg, or Tyrol ; given clear, frosty, autumn weather, and as your host a fair representative of the truly hospitable and truly sport-loving Austrians, no more delightful last week of September or first week of October can be passed

than in the log huts dotted here and there near well-known favourite 'Brunftplätze' on the uppermost outskirts of the vast pine forests of the Austrian Alps.

Starting out from your hut, which has given you a welcome night's shelter, an hour or so before dawn, accompanied if you are a novice by a keeper, you pursue your way silently and noiselessly towards the spot where your quarry has been betraying his presence by lusty notes. Only practised ears can tell exactly where that spot is, for there is nothing more deceptive than the roar of a stag. At one time it seems scarce a quarter of a mile off, two or three minutes later it will sound thrice that distance away, caused by the stag sending forth his challenge in the opposite direction. Moreover, the sound itself, with its deep guttural notes, is by no means always of the same strength.

By the time you have reached the vicinity of the deer, the rays of the rising sun are tipping with a rosy tinge the high snowclad peaks which form your horizon overhead, and the time when 'shooting light' will enable you to finger your trigger is near at hand. If the clearing on which the deer are disporting themselves—as yet only faintly outlined forms—is a large one, you will have more difficulty in getting close to your quarry than if it happens to be merely a glade or park-like opening in the forest.

Now every moment is valuable, for as dawn gives way to broad daylight, the deer are sure to return to the denser forest, where pursuit is infinitely more difficult. If the clearing happens to be an old windfall, or marks the pathway of an avalanche which has laid low the great pines and arves, fallen trunks scattered here and there, or little thickets of young saplings, usually afford means of approach. If you are hardy, and do not mind brushing the rime off the frost-laden grass with your bare feet, your heavy iron-shod boots will about this time be slipped off and the last part of the stalk be performed without them, the best of all precautions against striking stones, or, what is even more treacherously dangerous, treading upon twigs,

which snap with an alarming noise. Possibly you may have whispered to you hints similar to the one a keen old keeper once hissed into the ear of an august but inexperienced sportsman, who, in plain view of a fine stag, gaped aghast at the idea of baring his feet to the sharp rocks and frost-coated ground: 'Don't be afraid, Highness, of hurting the stones, or crushing the grass; up here God grows a goodly crop of 'em, but he doesn't make any too many stags such as stands yonder.'[1]

And when finally, with palpitating heart, every fibre in your body set, you have approached your noble quarry, surrounded as you must ever remember he is by keenly watchful members of his harem, brace yourself by a supreme effort for a steady aim; a good stag is worthy of your very best effort. And if you are a true sportsman, and not merely a slayer, stay for a brief moment or two before you end that life, the finger pressing the trigger. The call of a distant foe has just struck the ear of the gallant champion, and with virile impetuosity he steps forth from the circle of graceful hinds to hoarsely answer the challenge to mortal combat. His head is thrust well forward, his shaggy neck distended to twice the natural size, his antlers of noble sweep are thrown well back, one of his forefeet is angrily pawing the ground, whilst his hot breath issues from his nostrils and open mouth upon the frosty air like so much steam; it is a picture which you will never forget.

[1] Lawn-tennis shoes, with stout ribbed soles, are capital makeshifts for stalking purposes.

CHAPTER VIII

THE SCANDINAVIAN ELK

BY SIR HENRY POTTINGER, BART.

THE chase of the elk, one of the few grand wild sports still to be found in Europe, was thought worthy of mention by very old and distinguished writers, but their remarks on the subject are perhaps not likely to be of much practical value to the modern sportsman. The great Cæsar is our authority for the fact that the elk, having no joints to its legs and being therefore unable to lie down, is compelled to take its rest by leaning against a tree. The cunning hunter, continues the noble Roman, takes advantage of this peculiarity, and by sawing most of the trees in a wood frequented by the ponderous beast nearly through, brings about its downfall, when, from inability to rise, it becomes an easy victim. I have not yet tried this method of hunting, which is corroborated by Pliny, when writing of the elk 'in Scandinavia insula.' The celebrated naturalist also observes that, owing to the monstrous protrusion of its upper lip, the animal is compelled to feed backwards. Other ancient writers concur in the statement that the elk when pursued is liable to epileptic fits, but that he can occasionally relieve himself from the malady by opening a vein in his ear with his hind foot. I am inclined to believe, having never myself seen an elk in a fit, that now-a-days the remedy is invariably successful; but I find that the author of a small French book, entitled *Nouveau voyage vers le Septentrion*, and published in 1708, mentions that whilst hunting near Christiania

in the company of a Norwegian nobleman, he was fortunate enough to be an eye-witness of the death of the only two elk they found, both of which succumbed, after a severe run, to sudden epileptic attacks, otherwise they would certainly never have been overtaken! He records, moreover, his scornful rejection of one of the elk's feet, kindly offered by his host as a sovereign preservative against this terrible 'falling sickness,' on the not unreasonable ground that the pretended virtue of the foot had been of little use to its original owner.

We thus see that from the earliest times some degree of mystery and special interest has been attached to the habits and chase of the elk, whose obscure existence in the depth of Northern forests, and gigantic uncouthness of appearance, amounting almost to deformity, still seem to indicate him as a survivor from the remote age of antediluvian or primæval monsters.

Owing to the wise protective enactments of the Government, extending over more than half a century, the Scandinavian elk, which although formerly abundant was at one time almost in danger of extinction, has of late years again spread rapidly over a great part of Norway and Sweden, where-ever the country is sufficiently wild and wooded to suit its habits. It is indeed found even within a comparatively short distance of the capitals, some of the best elk-ground in Norway being accessible by a short railway or road journey from Christiania; but this is principally in the hands of gentlemen resident in that city, by whom the game in the adjacent forests is often as strictly preserved as that in our coverts at home. It appears, however, that the elk is still almost unknown in the extreme north—that is, within the Arctic Circle. Its range throughout the whole Scandinavian Peninsula, with the exception of rare stragglers, may be fairly reckoned as lying between 57° and 66° 30 N. By the published returns of the 'Norsk Jæger og Fisker Forening,' we learn that in 1889, which may be accepted as an average year, elk were killed in eleven out of the eighteen amts or provinces of Norway. North

Trondhjem, which includes the wild regions round Stordal, Værdal, Inderöen, and Namdal, was easily first in its return of 303 elk, of which 207 were bulls and 96 cows. Next, but a long way behind, came Akershus (containing the capital, Christiania) with 71 bulls and 47 cows, 118 in all; Hedemarken was third with 109 elk; Christian fourth with 82; Buskerud fifth with 77, and South Trondhjem sixth with 74. The long stretch of Nordland returned only 9 kills; and Finmarken, the Arctic province, not a single one. Altogether about 850 elk on the average are killed yearly in Norway, and in Sweden rather more than double the number. It must be remembered, however, that on the vast estates belonging to the great landowners in the south and centre of the latter country elk are preserved as strictly as foxes or pheasants are in England, and that, at the same time, there is no legal restriction to prevent the sportsman killing during the season as many elk, including calves, as he can, upon any property however small; whereas in Norway he is limited, under penalty of a heavy fine, to one deer for each registered or 'matriculated' division of the land, and the murder of calves is altogether forbidden.

The period during which it is legal to kill elk in Norway is nominally from August 1 to September 31, but this general law is subject to much local modification. Thus, in Nordland the full time of three months is still granted; in North Trondhjem it is curtailed to forty days, from September 1 to October 10; whilst in South Trondhjem its duration is for the month of September only. As by the watchful care of the authorities the close-time for any game in any given district of Scandinavia is always liable to extension, it is as well for intending lessees of sporting rights to ascertain exactly the terms of the local enactments, and, if possible, the probabilities of fresh legislation. Some years ago I took a large tract of forest in the province of Jemtland, in Sweden, and had just succeeded, after the first season, in making my quarters fairly comfortable, when the Government passed a law forbidding any elk to be killed

in that province for three years. Unluckily the local authorities neglected to enforce at the same time proper supervision in the matter of poaching. A Swede, who acted as hunter for me some years later, coolly confessed that he and his comrades had never had such good sport as during that long close-time. Whilst honest law-abiding men stayed at home and the officials pocketed their salaries and did nothing, the poacher gangs had the immense forest tracts all to themselves, and with the connivance of some of the farmers, who of course had their share of the spoil, were easily able to escape detection. The elk season in Sweden would appear to be subject to local variations similar to those in Norway; in the province of Jemtland it is confined to the month of September only.

Knowing nothing of the American moose, except from reading or hearsay, I am scarcely equal to drawing any comparison between it and the Scandinavian elk. It is, I understand, generally agreed that while the two animals are about equal in bulk, the moose, in the matter of horns at least, has the advantage—*ceteris paribus*—of its European congener. Nevertheless, the latter, when it has attained its full honours, is capable of furnishing the sportsman with a trophy of which he may well be proud.

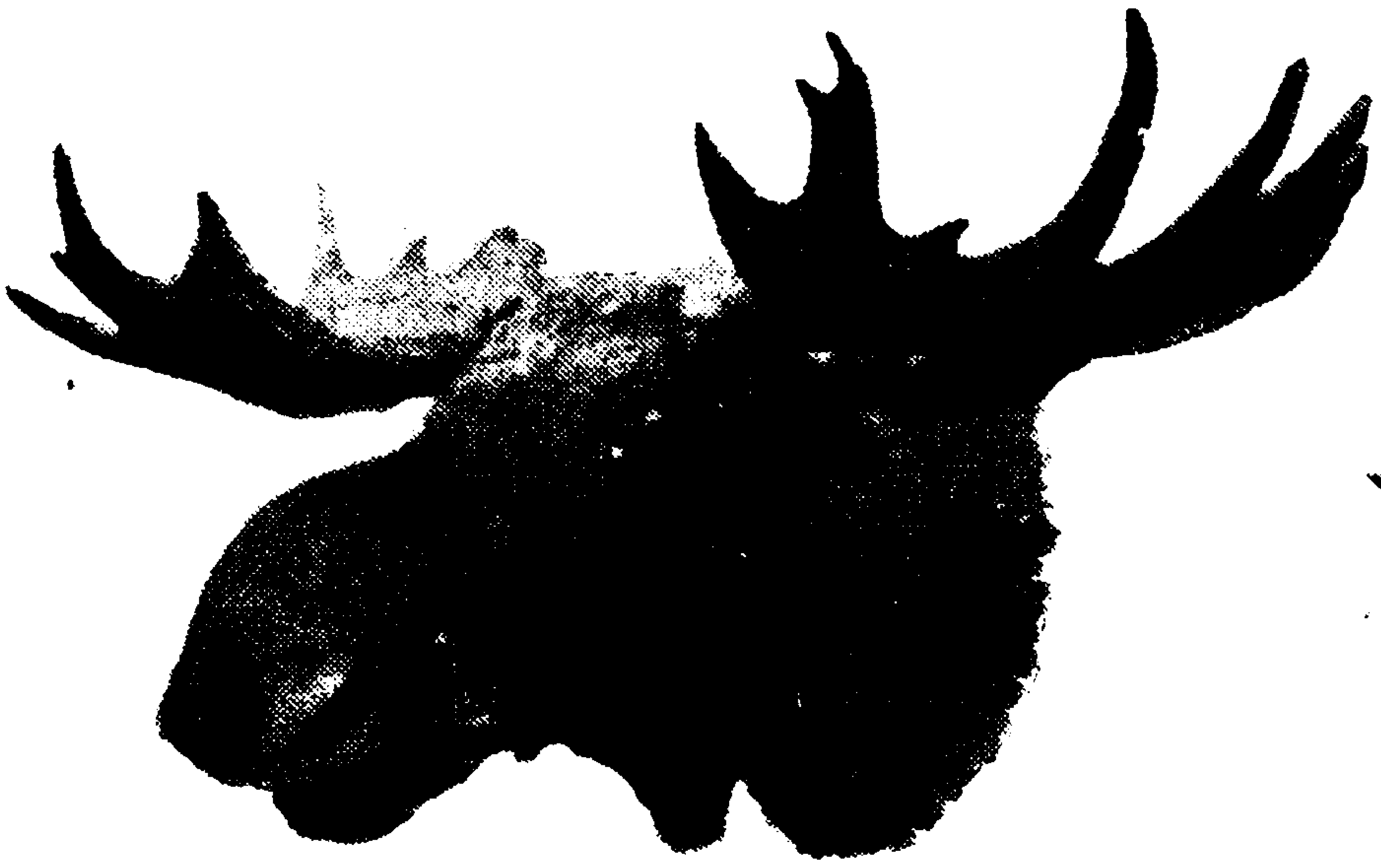
Whether, as some experienced hunters maintain, the age of an elk can be fairly determined by the number of points on its antlers, or whether, as others declare, there is absolutely no test by which it can be approximately guessed, beyond the fact that the ruggedness and spread of the coronet and the thickening of the base of the horns and tines are sure indications of old age, it is not for me, in the teeth of such conflicting opinions, to decide, although I have for some years taken especial pains to collect data and ideas on this very obscure subject. But I would suggest, with all due respect to the theories of others, that nature is seldom purely capricious, and that, taking as a basis the normal development of the horns during the first two or three years, which is, as a rule, regular and easily observable, and regarding the large number of elk

with antlers of almost precisely the same size and number of points that are annually killed, there does appear to be some method in the growth of the latter, and that it does seem only reasonable that some accuracy of calculation may be attained by those who have constant opportunities, if they will but take the trouble, of verifying it. I fancy that it is only of late years and since a small band of English sportsmen has devoted itself to the regular annual pursuit of the elk in Scandinavia, that the native hunter, the Norwegian at least, has been induced by example to exhibit any interest in the question of horns or to regard them as worthy of special attention: the size of the body and the amount of meat have always been to him of far greater importance. To this day I occasionally hear Scandinavian Nimrods express much incredulous astonishment at the fact that an Englishman has been known to spare a well-grown bull with an insignificant trophy, or a big cow. Quite recently, however, Norway has been invaded by a large number of German sportsmen also bent on the pursuit of the elk, and from all accounts these gentlemen, keen and energetic as they all undoubtedly are, are not, as a rule, prone to err on the side of declining chances. May I then, without polemical design, suggest it as probable that a bull elk attains its prime between the ages of seven and twelve years, when, in the natural course of events, the antlers will have from fourteen to twenty-four points or thereabouts, and that to this general computation there must be, from various causes, many exceptions? It is not too common to find the horns a perfect pair, although they may be symmetrical in their general curves and sweep; one has frequently a point or two more than its fellow. I have seen a single fine very massive head that had no palmation whatever, and on each antler only four tines, but these were of great length and thickness, and strongly resembled on a smaller scale those of the wapiti. The owner of another remarkable head, which I have not seen, describes it as being very powerful, with twenty-three points in all, in *double* rows on each horn. I find that among native hunters the belief is

prevalent that there are two kinds of elk, the one being less massive in build than the other, of lighter colour, and with invariably less palmation ; but I take it that such variation is simply due to local influences, and is common to many animals, cornigerous and otherwise.

Be all this as it may, we have at least the fact that the horns of all the elk in Scandinavia do run more or less to points, and that the majority killed have less than eighteen, which number, my experience leads me to believe, English sportsmen, whatever may be their opinions as to growth and age, practically regard much in the light of a 'royal head' amongst elk, while with any greater number it might be analogously classed as 'imperial,' although neither these nor any other terms that I know of are in use. A head with twelve or fourteen points is reckoned a decent trophy. I have never myself seen one preserved with more than twenty-six, and this was inferior in sweep and general measurements to some which had fewer ; on the best which has fallen to my own rifle I count twenty-three. It will be understood that in reckoning points I recognise the claim of every distinct and undeniable excrescence, of whatever size. By the kindness of Colonel C. S. Walker, of Tykillen, Wexford—a keen and successful hunter in India and elsewhere, and my predecessor in the elk forest which I now hold in Norway—I have been supplied with excellent and instructive photographs of some of the best heads he obtained during his four Scandinavian seasons, which have been admirably set up by Keilick, of 59 Edgware Road. They are superior to those in my own possession, and as good all round as any that I have myself seen ; but a few have, I believe, been obtained of slightly larger dimensions by English sportsmen in Norway. No. 1 is that of a bull in his prime, with eleven points on each antler. No. 2, that of an old bull described as having light grey long curly hair on his brow and crest, which gave him a very venerable appearance ; thirteen points on one horn and eleven on the other. Nos. 3 and 4 are different views of the finest specimen, with twelve points on

either side and great development of palmation—a bull also in his prime with no signs of age. The measurements of the latter head are as follows: Height of horns from tip of central brow point to tip of highest back point, 3 ft. 1 in.; height of palmation, exclusive of said points, 2 ft. 6¼ ins., and 2 ft. 5 ins.; curve of inner edge of horns from coronet to tip of inside back



No. 1

No. 2

No. 3

No. 4

points, 2 ft. ½ ins.; width of palmation, centre of horns, 11½ ins. and 10¾ ins.; between tips of inner back points, 1 ft. 11¾ ins.; between inner brow points, 11½ ins.; between tips of fifth points on either side, following curve and across brow, 4 ft. 5⅞ ins.; the same measurement, taut, 3 ft. 5¾ ins.; across skull at brow, 7½ ins.; fifth points, right and left, 6¼ ins. and 7¾ ins.; round

coronet, $10\frac{1}{4}$ ins. ; round base of horn, $6\frac{7}{16}$ ins. Sixteen is the greatest number of points I have ever seen on a single horn. This was picked up in the forest, freshly shed, in 1888, and undoubtedly belonged to an old elk of great size which had been known to haunt the district for some years. It is, however, an inch smaller all over, except in width of palmation, than the 12-point horns of which the measurements have been given. I believe that in 1892 I fired at (in a wood so densely set with stems that I had great difficulty in finding a passage for my bullet) and slightly wounded this very elk. Oddly enough he had been wounded in the nose the year before, and within a short distance of the same spot, by my predecessor in the shooting, who was also baulked by the dense growth of the pine-trees. He was by far the largest elk I have ever met with, and my hunter, a Lapp of great experience, assured me that he had never seen one bigger. The conformation of his antlers, so far as it was possible to judge in the obscurity of the wood, was exactly that of the shed horn, the great palmation with its fringe of closely set spikes being very remarkable; but to count the number of the latter during such a brief and exciting interview was impossible. I trust that some time next season I may be able to study them at my leisure, and to decide whether the horns have increased since 1888, or begun to deteriorate. It is certain that with great age, when the vital and generative powers which undoubtedly nourish their growth are impaired, they do go back, often becoming comparatively stunted and distorted. Bad wounds and scarcity of food will produce the same result. The elk sheds its horns during March and April, and the new growth begins to sprout early in June.

The average bodily measurements of a full-grown Scandinavian elk, let us say over seven years old, are as follows: Length from tail to crest, 9 ft. 5 ins. : crest to nose, 2 ft. 5 ins. ; height at withers, 5 ft. 8 to 9 ins. ; at quarters, 5 ft. 5 to 6 ins. ; from belly to ground, 3 ft. 4 ins. ; greatest girth, 6 ft. 11 ins. to 7 ft. ; round thigh, 3 ft. ; round forearm, 1 ft. 11 ins.

The accurate uncleaned weight of so huge an animal it is, of course, impossible, for obvious reasons, to obtain, but it is reported as having occasionally exceeded 1,400 lbs. An average deer will yield from 600 to 700 lbs. of good meat, and a heavy haunch turn the scale at 140 lbs.[1] The height of the bull at the shoulders as compared with the length of his actual body (the two measurements are nearly equal), the massive shaggy neck (on which, however, there is no very conspicuous mane), the enormously long head with its bunch of beard, huge hooked nose and bulbous lip, the rather sloping hind-quarters, and slender legs terminated by immense hoofs, combine to render him a most awkward and ungainly animal to look at; but the rapidity of his movements and his total disregard of the worst obstacles are at times astonishing, and nothing will strike the sportsman more than the way in which, if the golden moment for a shot be lost, the great deer will seem to suddenly and silently melt away like a phantom into the forest.

Another point on which some discussion has arisen is as to what vocal sounds are produced by the Scandinavian elk of either sex during the rutting season, and whether such sounds, if any be uttered, are of habitual occurrence. Personally, during six seasons' hunting, I have never heard an elk, either male or female, utter any sound whatever; but after long and careful inquiry into the subject, which revealed more antagonism of opinion than even the question of the horns, I have made out, on the clearest evidence, that the bull during the said season gives utterance to a kind of cross between a grunt and a snort, which is often repeated many times in succession, and is audible in still weather at a considerable distance, such sound being unmistakably an amorous call. It is known in Scandinavia as the 'Lokketone,' or 'Lokton,' and may be heard during the day-time. By equally certain testi-

[1] Under contracts for elk hunting on private ground it is generally arranged that the shooter shall keep the head, the hide if he pleases, and one haunch, the rest of the meat going to the proprietor or farmer of the land, by whom it is salted or smoked for winter consumption. But on State lands, the rights of which are periodically sold by auction, the shooter retains the whole carcase.

mony, it is proved that, in moments of rage and defiance, the bull will also roar or bellow furiously. About the call of the cow there is no doubt whatever; she can also, on occasion, produce a loud, harsh roar, intended as an attractive summons to the bull. Colonel Walker mentions his having for some time watched a cow in the very act of uttering this call, after the bull had been shot whilst paying her great attentions. She wholly disregarded the shot herself, and the approach of the shooter, whom she allowed to come within twenty yards before she moved quietly off. When about half a mile away she recommenced her alluring roar, which Colonel Walker describes as 'like the noise of a very angry bear when you have him where he cannot escape you.' The cow has also, when separated from her calf, a milder call, nearly similar to that of the domestic animal. The art of calling elk has, happily, never been practised in Scandinavia, and as all the hunting takes place during daylight, and as, moreover, the inhabitants of the interior have a decided objection to being abroad during the dark hours of either evening or morning, this subject, like that of the horns, has probably not received from them much attention. You will find men who have passed all their lives in the wilds of Norway, and constantly hunted the elk, ready to swear that, with the exception of the 'Lokton,' neither sex utters any cry whatever. It is somewhat hard to reject altogether the idea that the elk of Scandinavia is, during the rutting season, habitually more silent than the moose is reported to be—but here I get out of my depth.

The first signs that the rutting season is beginning usually reveal themselves about the third week in September, when the hunter will discover in the forest sundry young fir-trees that have been freshly barked and cut to pieces by the horns of the bull. This would scarcely of itself be conclusive evidence, as the bull will occasionally spar with a tree much earlier in the month, possibly to complete the removal of the velvet. I have seen the horns of young elk covered with it as late as the end of the first week. Corroboration will be sup-

plied by sundry shallow scrapings of the ground, the forerunners of the deeper pits which the bull scoops out when his frenzy is more advanced. When, owing to the purpose for which the elk uses them, these pits begin to be so ammoniacally odoriferous as to become guides to even a human nose, then it may be accepted as a certainty that a bull accompanied by a cow is, if not previously disturbed, somewhere in their vicinity.

According to the best authority, the bull only remains with the cow for about three days, after which she will have nothing more to do with him, and beats him off, whereupon he resumes his travels in search of fresh loves. During the whole rutting season, which lasts for about three weeks or a month, and is therefore included to a great extent in the present Norwegian elk season, he eats little or nothing except certain plants of a stimulant character, and becomes, in consequence, reduced to the worst possible condition. At this time he develops a very strong but not particularly disagreeable odour, akin to musk, to such an extent that a hunter might often follow by using his own nose, without the aid of a dog. All the trees and bushes, and even tall grasses against which he brushes during his progress through the wood, are tainted with this peculiar scent. The old bull elks now become very savage and pugnacious, and, not content with attacking each other, will occasionally run at any object they see in motion. My Lapp hunter tells me that when prospecting for elk without a rifle and in the interests of his late employer, he was several times charged by bulls, and had to run for his life and conceal himself in a thicket. But on all these occasions as soon as the elks reached his track and, nosing the ground, recognised the scent of humanity, they in their turn swung round and retreated. It would, however, be foolhardy, if unarmed, to stand their charge, as they might strike the life out of a man with their forefeet, their most dangerous weapon, before their timidity of or respect for the human race generally came into play. An English sportsman of my acquaintance, while returning one evening from an unsuccessful chase, in crossing a small opening

in the forest, was charged by a bull, who rushed out of the covert and was only checked at thirty yards distance by a bullet between the eyes.

Both sexes of elk are often seen together by the peasants during the haymaking season, in the forest and near the mountain dairies, and small families, consisting of a cow with one or two calves and a single bull (or possibly a couple), still hold together at the beginning of the hunting season; but as, at the same time, we constantly find a certain number of bulls and cows leading solitary lives, or one or two of the same sex together, the secret of these domestic arrangements is shrouded in some obscurity, and one can only conclude that, as in the case of men, there are some male elk who prefer a roving bachelor life, whilst others have more uxorious and paternal tendencies. I have never been able to discover that the Scandinavian elk has any prominently gregarious instincts under ordinary conditions of existence, although I have heard it stated in Norway that they sometimes unite during the winter into bands of a dozen or more. In some very highly preserved districts, such as the royal forests of Sweden, mentioned later, they are now and then artificially congregated in considerable numbers, and a Swedish gentleman once told me that on a part of his property, at the head of the Gulf of Bothnia, there existed on a stretch of land bounded by two rivers a 'herd,' as he termed it, of nearly a hundred elk. But it appeared that in this district, owing to peculiar circumstances and local laws, the deer had not been shot for, I think, over twenty years, and were carefully watched by foresters, so that we have here also signs of compulsory gregariousness; but it is not safe to be dogmatic in this direction. What is more to our present purpose is the certain fact, on which the sportsman may rely, that during the hunting season he will not be troubled or perplexed by any gregarious tendencies on the part of the elk, whether because there are not enough of them or because such is not their habit is of little consequence; he will, I think, discover that a more unsociable

and sporadic race of animals, averse to neighbours, does not exist on the face of the earth.

In Scandinavia, now that the use of traps, pitfalls and the like is abolished, there are three legitimate methods of killing elk—namely: stalking with the 'bind-hund,' or, as I may render it in English, leash-hound; running with the loose hound; and driving. Of these three methods it may be said that the first is more worthy than the second, and the second than the third. In Norway, owing to the operation of the legal enactment 'one farm one elk,' driving is practised on so insignificant a scale as to be scarcely worth noticing. Occasionally, when elk are known to frequent a precipitous mountain, whence it is impossible for them to descend except by certain passes where the guns can be stationed, a few beaters may be employed to move the elk quietly, with a fair prospect of success; but if it should happen that two or more of the passes are within the same holding, some care is necessary to guard against the chance of more elk than the one allowed being illegally killed. A drive of this kind is in Norway termed a 'klapjagt,' from the noise made by the beaters. The term is corrupted by British sportsmen into 'slapjack.' In certain situations where the ground is favourable, as in a narrow glen or on an isthmus between two lakes, the single sportsman may attempt something of the same kind by the aid of his hunter or attendant, who, making a long circuit, comes upon the elk down wind, and starts them towards the gun in ambush. Nothing more than the wind of man is necessary to move the elk, and the more quietly all these driving operations are conducted the better. The hunter who is wise will always avoid disturbing elk needlessly or wantonly, as they quickly become suspicious of danger, and are apt to travel long distances. In Sweden elk driving has been practised for a great number of years, and sometimes on an immense scale. In Lloyd's works, 'Field Sports of the North of Europe,' and 'Scandinavian Adventures,' will be found a detailed account of some of the great 'Dref- and Knäptskalls,' arranged in former

days by the Master of the Hunt for the delectation of royalty, by which many elk, bears, and other animals were killed. But, as regards this branch of our subject, it will be sufficient to notice very briefly two great drives which have taken place in quite recent times in one of the royal forests near the town of Wenersborg and the mountains of Hunneberg and Halleberg, at the southern extremity of Lake Wenern. Both these great functions were arranged for weeks beforehand, and many hundred beaters employed in sweeping with a gigantic cordon, which was never relaxed by day or night, an enormous extent of forest, and moving the elk gradually to the stations of the guns. The first 'skall' took place during the visit of the Prince of Wales to Sweden in 1885, when forty-nine elk were killed during the day; the second, in September, 1888, when, so completely had the stock recovered from the previous slaughter, that in three drives, also on the same day, there were respectively slain twenty-four, twenty-eight (in this case bulls only), and fourteen elk—a total of sixty-six. Great damage had been done by the deer to the young Scotch firs in the forest, which is some excuse for such a massacre.

By the Norwegian law, elk-hunting with the loose dog is in reality forbidden; at the same time, in several districts it is practised to a considerable extent, and with impunity. But it is in Sweden that this style of chase is most in vogue. To begin with, the physical geography of that country lends itself to the sport. The Swedish forest is for the most part of a rolling character, swelling and sinking into hill and dale of respectively moderate elevation and depth, and spreading out into huge morasses and tracts of natural upland meadow with a degree of uniformity that produces tame and somewhat monotonous scenery. Sweden lacks the deep, gloomy gorges, the precipitous or terraced mountain-faces, the boulder-strewn and birch-clad dells of the higher fjeld, and the barren, stony summits which are characteristic of Norway, and amongst which, if a courageous and persevering hound be loosed at elk, there is great danger of his being quickly and entirely lost to

sight and hearing. It is said that an elk can go wherever a man can, and, although this may be somewhat of an exaggeration, inasmuch as no elk could climb the Matterhorn, it is nevertheless astonishing what tremendous ascents and descents his long legs can accomplish under pressure, and with what rapidity he will travel for miles over the fjeld, from valley to valley, so that the most active followers of the loose dog would in such a chase be nowhere.

The elk hound belongs to the breed used by the Esquimaux, a small species of which is known in England under the name of 'Spitz.' There are two types of this dog, the one being smaller, lighter limbed, and more finely coated than the other; but they have in common the characteristics of thick hair with an undergrowth of wool, sharp noses and ears, and a bushy, tightly-curled tail, like the inner whorls of a fossil ammonite. Their colour ranges through various shades of grey, brindled and foxy, is occasionally pure black or white, or a mixture of the two. A well-bred and thoroughly well-trained elk hound is a valuable animal and hard to procure: 25*l.* to 30*l.*—a large sum in Scandinavia—or even more, is not too high a price for a perfect animal, when we consider how much is required of him, how greatly the enjoyment and success of the sportsman depend upon his experience, sagacity, nose, speed and courage, and how considerable is the market value of each animal that by his aid falls to the rifle of the professional hunter: head, hide and meat included, it may be set at from 6*l.* to 10*l.* But the leash-hound, to be used only as a stalking dog, seldom commands anything like so high a price, the Scandinavian natives being, as a rule, singularly ignorant or impatient of this style of pursuit. The best leash-hounds are those which are never loosed. This will be easily understood when we reflect that in stalking a thoroughly good dog will be mute under all circumstances, and always temperate, never straining violently at the leader, even when most eager and excited by the proximity of the elk: whereas it is essential that the loose dog should give tongue freely when he finds, overtakes,

or bays the deer, in order that the sound may serve as a guide to the shooter. With the constant expectation of being loosed, he can hardly be expected to restrain his emotions when his instinct, or possibly eyesight, tells him that the glorious moment of freedom is, or ought to be, at hand. Few, if any, dogs can play both *rôles* equally well; it will be found that a hound accustomed to being loosed will, in stalking, invariably strain impetuously at the leader, and that it is not safe to let him view the elk, as he will in all probability whine or bark: on the other hand, one that is rarely slipped will only follow for a few hundred yards, and seldom or never stop a deer. I do not deny that good useful dogs may now and then be found who will acquit themselves tolerably in either character, but I am speaking only of the best of each class. Thoroughly broken and trustworthy dogs are sometimes allowed to range the forest from the first, but as a rule the hound is never slipped until, either from his conduct, or from his own observation of signs,[1] the hunter becomes certain that the elk is not far off, or until he despairs altogether of finding one, and trusts to the dog as a last chance. This is but a too common ending to a day when the forest tract is large and fresh signs of elk not discoverable. A brace of dogs are frequently allowed to run at the same time, but it is a safe maxim that when a single dog notifies that he has found and bayed the elk, a second should not be loosed, as his sudden appearance on the scene will often start the deer off and render him more difficult to stop.

In searching for elk with the dog still in hand the hunter works slowly up and across wind, utilising his knowledge of country to the utmost advantage. The dog at such a time—and this applies equally to both styles of hunting—precedes him at a distance of five or six feet, being restrained by a leader or leash, which is fastened to the harness. The best form of harness consists of a belly-band and chest-strap of softest leather sewn together, and further united by a strap which

[1] Knowledge of elk spoor, to be of any practical value, can only be learnt by experience: I have not therefore attempted any description of it.

passes between the dog's forelegs. The belly-band buckles just between the shoulders, and at this point the leader is attached either to a ring or by a simple knot. Some hunters are content to use an ordinary collar; but this is a wretched plan, as with a dog at all given to pulling it produces choking and eventually injures the wind. When the harness is properly made all pressure is on the strap across the broad of the chest. On catching the wind of elk, or of their fresh spoor, the dog naturally faces towards it, when the hunter must use his judgment as to the right moment for loosing. The part of the loose dog, having once found the elk, is either to bring him to bay, or to cause him so far to slacken his pace that the shooter may be able to get up. Whilst the elk is running at speed, the dog is generally mute in pursuing, but the experienced hunter can tell by his note whether the quarry is moving at a moderate pace or is actually stationary. The old bulls, when they have not got wind of man or been otherwise scared, are often easily brought to bay, and in such a case the hunter may approach almost at his leisure; but younger elk, and cows in particular, are much more difficult to stop, and will, as a rule, travel a considerable, sometimes a great, distance before halting. Deer of all ages are specially shy if they have been roused when lying down. Their daily siesta lasts from about noon —or sometimes, according to weather, an hour or two earlier— until two or three in the afternoon, and consequently hunters with the loose dog generally halt during this period, or at least part of it, and bivouac in the forest. It is said—and, I believe, with some truth—that in those districts of Sweden where the elk are during the season continually hunted in this fashion, they are invariably suspicious, when the hound puts in an appearance, that man is somewhere in the background, and that, even when at bay, they are straining their senses to detect the presence of their real enemy, being of course perfectly aware that the dogs, for all their noise, can do them no harm. It is in any case needful for the hunter, however recklessly he may have been running before, to make his final approach as

cautiously and noiselessly as possible; and this is not so easy in a Scandinavian forest, where the ground is usually cumbered with any number of dead trees armed with spikes as sharp as rapiers, of rotten trunks half-buried in moss and rank vegetation, and of dry branches and twigs which crack loudly beneath the over-hasty and incautious foot. In the rutting season indeed such a noise is now and then of some slight service to the hunter. I have known several instances in which, the wind being right, a bull either searching for the cow or suspicious of a rival has run back out of the thicket to see what was approaching, and paid the penalty of his curiosity. Such an incident can of course only occur when the dog is in hand, and the sportsman will do well not to presume upon its very rare advantage.

I recollect a scared elk running twenty English miles, with the dog still sticking to him. After giving me a difficult chance, he broke his bay two or three times during the first hour of the chase, and how many times subsequently I cannot say, as, finding the pace too hot for my age and weight, I stopped and let the hunter, who was young and light and a celebrated runner, go on with my rifle. This happened about 11 A.M., and he shot the elk just before dusk. His dog, dear old Kurrè, was one of the staunchest loose hounds that ever lived; he was, in fact, too good, for if he once got up to the elk he would never leave it until dark, and not always then. On one occasion he held a bull at bay all night, until his master came early in the morning and killed it.

So keen was this dog to keep the attention of the bayed elk on himself, that with a kind of demoniacal glee he would actually roll on the ground just out of reach of his forefeet. When very young he had been struck by an elk, and was supposed at the time to be seriously if not mortally injured; but he recovered himself, went on again, and eventually stopped the bull, which was then shot. With all this ferocious courage there never was a dog more gentle, good-tempered, and well-behaved in ordinary life. When an elk hound, as is certainly

not often the case, is possessed of such magnificent staunchness as this, great care must be taken never to slip him at a scared elk, unless the shooter is prepared for, and physically equal to, a long stern chase which may last for some hours. Moreover, others besides the owner of the dog may profit by his grand qualities. The law of Scandinavia permits an elk that has been *bonâ fide* in the flesh roused on and moved off one property, to be followed at the time on to another and there killed, although one may not so follow the freshest spoor of an animal that is simply travelling of his own accord ; there is, however, nothing to prevent the owner of the other property from killing the elk thus moved on to it. I was once hunting near the great lake Kallsjön in Sweden, with Kurrè and his master, when the dog, who was running loose, slipped away unperceived and took up the fresh spoor of elk which he did not overtake until out of our hearing. Having no clue to the direction in which he had gone, we were at last, as evening came on, compelled to go home without him. The next day he was sent back with many thanks by a farmer who lived some miles off, and had heard the dog baying the elk close to a tarn where he happened to be fishing. The man ran home for his rifle, returned to find Kurrè still holding the family of three—bull, cow, and calf—and killed the lot in three shots ! No, Kurrè was positively too good. Some dogs are cleverly trained never to cross a large river or a lake in pursuit, which in a land of many waters like Scandinavia precludes the chance of their getting too far away. I believe that Kurrè would have swum the Skagerrak after an elk. But the great majority of elk dogs will give in as soon as the deer really takes to travelling, and too many of them much sooner. The hunter must be careful not to let the leader slip out of his hand when the dog is straining eagerly on spoor, and never to loose him with even only a collar on. Considering that the elk when tackled by the dog will, as a rule, make his way through dense covert and over the most tremendous obstacles in the shape of 'windfalls,' where the dog has to keep him company, it will be understood

that any even momentary check to the latter's nimble movements, such as might be caused by a tree-spike catching in the collar, may result in his being disabled or killed. I once, when stalking, fired from the top of a high steep bank at an elk which dropped to the shot and lay motionless. The hunter, who was behind me, thinking the beast stone-dead, foolishly let go the dog, who, with the harness on and the leader trailing, ran down the bank, and when within a few yards of the deer was brought up short by the leader becoming entangled in the branches of a fallen tree. The elk at this moment revived, and was able to rise so far as to squat on his haunches, but the hind quarters being paralysed by a shot in the spine, he could not reach the dog, otherwise he would most certainly have destroyed him, unless I could have dropped him again with a second bullet; but one instant and one blow of the forefoot would have been sufficient for the catastrophe. The hunter, who assured me he had never done so foolish a thing before, was lucky in having the possible result of his first folly brought home to him by so forcible and harmless a lesson.

From what has been said it will be clear that elk hunting with the loose dog is a manly, noble sport, fitted in reality for those who have youth, activity, and decided staying powers. At the same time the race is not always to the swift; experience, cunning, and knowledge of country will effect a great deal, and under certain conditions the elderly hunter may achieve some success; but if the elk really means running, he may as well confess at once that he is not in it, and sit down and light his pipe. But I strongly recommend him to turn his attention solely to stalking with the leash-hound. He will find it scarcely less exciting than the other branch of the sport, and quite fatiguing enough, although it lacks that species of triumph, so dear to Englishmen, which results from success attained by very distressing physical exertion. The serious drawbacks to loose-dog hunting are, first, the common necessity of killing time in the forest—or, it may be, in a 'sæter' or hay-house—for some hours and in all weathers whilst the elk are lying

down. Secondly, the fact that it is, to a great extent, blind work, that one is entirely dependent on the dog and must run to a sound, that there is little or no opportunity for the science of woodcraft, and none for that study of the object of the chase which is so dear to the stalker. Thirdly, that you cannot run a single deer for any distance without disturbing a great extent of country. Fourthly, that there is the obligation, if not invariably yet nearly so, to kill whatever beast the hound has succeeded in stopping, be it a young bull with insignificant honours or a cow with a calf in tow. The Swedish hunter never gives quarter; his immutable doctrine may be summed up in the words, 'Meat for the man, and blood for the dog.' He will not risk disappointing his hound and perhaps ruining his staunchness, nor will he, if he can help it, stultify the whole *raison d'être* of the chase, nor forego his hankering after the flesh-pots. I do not say that the English sportsman is absolutely compelled to adhere to this merciless creed, but he will find it difficult to withstand. He is the actor in a drama in which the hound takes the leading part throughout until the climax, and for that he is himself responsible; excitement, struggle, endurance, opportunity, these are the several stages; it rests with him what the final one is to be: if failure, well, man is prone to err and so is his bullet; after all, he has done his best and tried to succeed—but refusal! I think he will become conscious, possibly against his will, that this is, under the conditions of such a chase, the most miserable *fiasco* of all: *the* chance at last, and tamely to forego it! he will feel that he who acts thus is deserving of that limbo to which Dante consigned the otherwise blameless man who refused the popedom:

Che fece per viltate il gran rifiuto.

I find it to be commonly supposed that the chase of the elk is almost always confined to comparatively low ground, covered with pine wood and swampy thickets. There was a time when I had this notion myself, and as regards Sweden it

is, no doubt to a great extent, a correct one. But I have recently had reason to change my mind a good deal on this point, and I cannot do better than quote the following passage from an article of mine in the 'Fortnightly Review':

Under the guidance of Elias (my Lapp hunter), who is a master in woodcraft, elk hunting was, in a great degree, assimilated to deer stalking. He was all for pursuing the chase on the highest possible ground. 'There are, of course, always elk in the low pine forest,' he would say, 'and in winter it is full of them; but at this season of the year the place to find and *kill* them is the high fjeld, or thereabouts.' That this dictum was in the main correct is proved by the fact that last season, during thirty-two days' hunting, we sighted—including all ages and both sexes—no fewer than forty-one distinct elk, over two-thirds of which were found on the high terraces and slopes just under the crest of the mountains, or in the quiet dells and hollows of the fjeld itself, where the birch-copse often grew barely high enough to conceal them. They were occasionally seen lying out in the open, like red deer. The term 'high' as applied to the fjeld is, of course, relative to the general elevation of the country.

We found the best stalking ground at between 1,500 and 2,000 ft. above the level of the valleys. I am here, of course, speaking of Norway, where in the vast desolate districts north of Namsos I have been lucky enough to secure the sole right to kill elk over a considerable tract, about equal in size to the county of Surrey.[1]

The 'bind hund' or leash-hound should be trained, as I have said, to be perfectly mute and quiet even when he views elk, and should be taught also to keep close to heel when not required to lead. This latter point is often neglected. It is pleasant to observe the clever way in which a well-broken and steady elk dog will steer his way through covert when in advance, seldom going the wrong side of a tree or bush, and obeying instantaneously the slightest hint of the hand which

[1] To explain how such a tract, entirely mountainous, may be conveniently hunted, I may mention that there are eight specially built huts and four small farmhouses which serve as quarters.

holds the leader; but I have watched with still greater admiration the extraordinary accuracy with which my Lapp hunter's dog, Passop, when kept at heel, judges the pliability of any ash-plant or other sapling over which the slack of the leader fastened to his master's belt is likely to sweep. If it is sure to bend, the dog simply stiffens his neck until the slight strain is past; but if it is too rigid or too much branched, he at once shifts his position from the man's left knee, close to which he runs, to the right, thus bringing the loop of the slack directly behind the Lapp, who of course avoids the obstacle, and in ninety-nine cases out of a hundred there is no check to the progress of the pair. When the slack occasionally catches in a projecting root, stone, or dead branch, he will spring like lightning to one side, or even backwards, and clear it before it is drawn taut. I notice that if a rare mistake does occur and the dog goes the wrong side of a tree, the Lapp, even when holding the leader, will never pass the end round the tree as some hunters do, but always pitilessly compels the dog to dodge back to the proper side and free the line himself. The slightest, almost inaudible, sound with the lips is enough to send Passop to the front full of subdued eagerness, and a turn of the wrist to bring him to heel. It is a treat to witness the way in which, when purposely brought to the brow of a hill, he will calmly squat on his haunches and test the wind for many minutes together, quite motionless except for the slight turn of his head and his incessantly working nostrils. By carefully watching his sagacious countenance, one can almost follow his subtle appreciation of the various odours that are wafted to those delicate organs. It may be that he will at length suddenly rise, and without hesitation begin to lead in a particular direction, in which case it becomes a certainty that there are elk somewhere in that quarter, although they may be still a couple of miles or more away. Again, it may be that this prolonged nasal scrutiny will result in his lying down, and, with studied carelessness, beginning to nibble his foot or lick himself, thereby demonstrating that he has temporarily lost all interest in the

wind, whereupon it becomes scarcely less certain that there are no deer within a reasonable distance ahead, and that one must strike into fresh country to find them. When there are no elk about, I have seen this hound very keen, although quiet, on the scent of fox or marten-cat, which few dogs can resist ; but in the vicinity of the nobler game he always pays the strictest attention to business, and it is impossible to misunderstand him : quite mute with his mouth, he speaks eloquently with the whole of his body. Some dogs are very untrustworthy, and cause infinite trouble and annoyance by working as impetuously up to the signs of fox or marten, or even capercailzie, as they will to elk spoor. In approaching elk with the stalking dog, before they are actually sighted—when his occupation is, of course, for the moment gone—care should be taken not to advance in too direct a line up wind ; the dog should be pulled off now and then to right or left, as the case may require, to guard against any lateral movement on the part of the deer. It will be found that when thus pulled off, the hound will be always trying to swing round and face the wind again, and his movements in this way will, if carefully watched, afford a tolerably sure indication of the actual or quite recent position of the quarry. Any eminence in the right line should be ascended, and the ground in front surveyed from just below its crest ; and as elk have a habit of turning abruptly and lying down, or moving to leeward of their former track, every yard of ground on either side must be made as safe as is possible under the circumstances. Elk can, of course, be approached either on the line of their spoor or by the wind alone, in case they have come from the opposite direction, and have not traversed the ground over which the advance is made.

When the hunter is sure that he is close upon the elk and is cautiously ascending a rise for the purpose of examining the country beyond and at his feet, including the opposite slope of the rise itself, there is considerable art in making safe each successive inch—which of course represents according to distance several or many yards—of the fresh ground

as it comes into view. The narrow line revealed should be carefully examined with concentrated attention, and as far as possible to right and left. In this way the top of an elk's horn or the line of his back may be detected before the whole animal is visible. The natural tendency of the eye is to search too much space at once, and to keep on repeating a general gaze, including ground already made safe, instead of fixing an intense one on a fresh and limited area. Where there is much forest or brushwood, field-glasses will be found of the greatest use in searching between the foliage and stems; for in spite of their size elk are astonishingly difficult to detect, even in low covert and by the most practised eye. Moreover, in the shadow of a wood various objects will often bear so strong a resemblance to a motionless elk, that even eyes as keen as those of my Lapp hunter, whose quickness and strength of sight are remarkable, are frequently unable to determine their real nature without reference to the glasses. He always carries a pair of his own.

The stalker at a considerable elevation will often find that, when expecting momentarily to view the elk, he is led to the verge of a very steep slope, forming the side of a ravine or dell, overgrown with trees and brushwood, and not seldom strewn with much dead lumber. On a bank of this nature there frequently flourishes a considerable growth of tall herbage, and of birch and mountain-ash, trees on which the elk delights to feed; the bark of the latter is his especial dainty: I have seen copses in which out of some hundreds of stems there was scarcely one that did not show marks of his destroying teeth. In such a situation—a very common one—it is almost impossible to approach the elk from above. If they are not detected by peering over the bank, the only safe plan is first carefully to examine the farther side of the ravine, and then by making a long circuit to try to gain some high point thereon from which, with due observance of the wind, the hither side may also be inspected. I have known many native hunters, as hasty and impatient as their dogs, blunder down into such

a steep thicket and effectually scare the elk before they sighted him. In fact, a judicious use of the many rocky knolls and steep acclivities which rise above the brushwood in the high-level forest of Norway is one of the principal features of stalking, for it is in the copses which clothe the sides of the watered dells and the basins of the mountain tarns that the deer are oftenest found. The main point is to sight the elk without disturbing him, after which it becomes a question of time and patience to get a shot. If he is not at first approachable, you must watch him until he shifts his position, and then try again; it is better to spend the whole day in getting up to a beast than to scare him and have to pass the next two or three days, and possibly more, in finding another. Stalking has the great advantage over loose-dog hunting that one need never be idle; elk when lying down may be frequently approached with great success, and if one is forced to wait until they move, such compulsory idleness is at all events fairly in the day's work; it has in it the elements of excitement and continual hope, and is far better than merely killing time under a pine-tree or in a hay-house.

Although the stalker will find the high-level beats best suited to his work, he will be at times obliged to exchange their freedom and glorious air for the close monotony of the lower pine wood, especially for those long sombre stretches of it—half level, half slope—which so often lie between the margin of a lake and a range of towering cliff. Here he will find, as a rule, but little undergrowth or brushwood, but from among the moss-coated boulders many a tall, slender mountain-ash will be found springing up and flourishing wherever it can gain sufficient light and air. Such a place is a favourite resort of elk, who are generally aware of some steep pass among the cliffs by which they can regain the higher ground. Supposing the hunter to have settled to his satisfaction that there are deer in such a stretch of wood; supposing him to have found their fresh signs all over it, the bared wood of the ash-saplings showing white and the edges of the bark still bleeding, he has

before him a most difficult task in the stalk. This is best effected by advancing in long zig-zags, working from the edge of the water to the highest point where the signs are visible, and *vice versâ*. This must be done at the slowest possible pace, and with all his senses constantly on the alert. The thickly set stems of the trees will help to conceal him, but they inconsiderately render the same service to the elk. In this way half a mile of ground, taken in a straight line, may perhaps be covered in an hour, and during that time the intense attention must not be, in the slightest degree, relaxed ; there must be no hurrying of the cat-like step nor careless planting of the foot, the rifle must be ready and the hand prepared to act on the instant. In this kind of work there is little more physical exertion than in sauntering along Piccadilly, nothing that is productive of muscular fatigue, and yet such is the tension of senses and nerves that, after a long spell of it, I have caught myself yawning with that peculiar tense, rigid yawn which has not the faintest connection with mental boredom, but generally betokens physical exhaustion ; and I have seen my hunter—whose responsibility was of course greater than mine—lean and wiry as he is, growing visibly paler and wiping from his brow the dew of anxiety. And then in a moment, when one least expects it, if that can be said of a man who is always expecting it—but the apparent paradox is the strict truth—comes the climax : a glimpse of a huge dark grey mass amongst the dark grey stems of the trees, a momentary sensation of all the columns of all the temples in Egypt having risen to baulk one, and in another second one's whole soul is concentrated in the effort to find a clear space among that timber labyrinth for the bright bead at the end of the barrels and the ounce of lead which it directs.

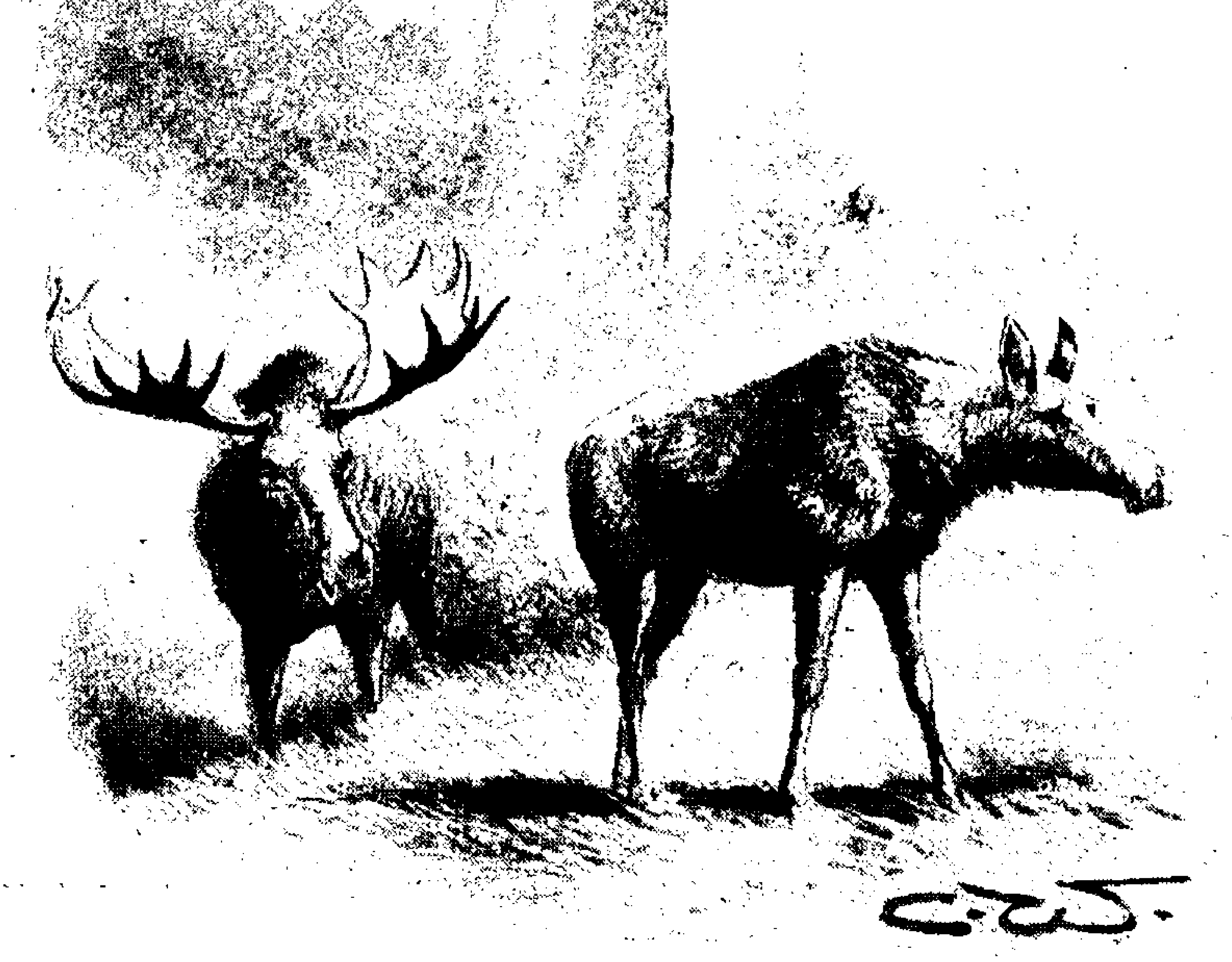
The Scandinavian elk has, I believe most unjustly, been branded with the epithet of stupid, probably owing to his uncouth personal appearance, which is certainly not suggestive of a brilliant intellect, nor do I deny that the bull frequently owes his safety to the superior wariness of the cow. But, irrespective

of their keen senses of hearing and smell, the great deer will, when they have been scared and become, in some mysterious way, aware that they are being tracked, resort to all kinds of artifices to conceal their huge trail (of the conspicuousness whereof they seem to be painfully conscious), and to baffle and confuse the pursuer. A favourite trick, for example, is to wade or swim for a long distance when the simple route lies along the edge of a tarn or lake; another, to double sharply back at an acute angle and travel for a long way to leeward of their original line before resuming it; a third, to enter a river and work up the bed of it for several hundred yards before actually crossing; a fourth, to travel out of their way along a stony ridge where they leave no footing. I believe myself that these stratagems always originate in the brain of the cow, especially when she has a calf beside her. If they are not invariably successful, chiefly owing to our employment of another animal of equal nose and sagacity, they at least seem to me to exhibit a considerable share of reasoning faculty incompatible with stupidity. I find that my hunter is imbued with great respect for the intelligence of the elk, which he considers as not so far inferior to that of the bear; but of their eyesight he has not a high opinion. Where the lie of the land will admit of it, a forced march may sometimes be executed with great advantage when the elk have turned and are retreating down wind. On the very last day of last season we were following on low ground up wind the spoor of a bull and cow which had caught a glimpse of us, but were not much scared; after trotting for some distance they subsided, as we saw by the tracks, into a walk. But on reaching a spur of rock which jutted into the forest, the extremity of a ridge which ran up to a considerable height, they rounded it and at once turned down wind, thereby placing us in their rear to windward had we continued to pursue them. Without hesitation my Lapp hunter faced about, and after following the back trail for some way under the ridge, began to ascend the slope of the latter in a slanting direction at such a pace that I needed all my forty days' training to keep up

with him. As however I guessed what he was after, there was no need to ask questions, but simply to 'keep wiring away.'

In about five-and-twenty minutes we reached the top of the ridge, which was quite open and mattressed with thick moss, on which we lay down. We are not given to talking much during the chase, and for ten minutes did not say a word. My business was to recover my wind for shooting, and I was content to leave the rest to the Lapp and Passop. I found that we were on the brink of a little cliff, perhaps eighty feet high, immediately under which was a fairly level terrace about a hundred yards broad and covered with birch-trees and brushwood, with a few Scotch firs at intervals; beyond this the ground dropped rather suddenly to the distant landscape. I had forgotten all about my rapid climb when the Lapp gently pressed my elbow and pointed to the left, and in a few seconds I saw the horns and broad back of a bull elk surge up amongst the brushwood. He was walking behind a very small cow who preceded him by five yards or so; we had got well ahead of them, and they were now approaching us down wind and without the slightest suspicion. The cow gave the line to the bull just along the edge of the bank where the terrace ended, and where the trees were thickest; by watching her I could tell where he would appear a few seconds later. Fortunately, just in front of us there was a clear space amongst the branches about as long as an elk's body, and when the cow filled this gap I got the rifle up, and as soon as the point of the bull's shoulder crossed the sight pressed trigger. He fell over at once and disappeared, all but one motionless horn, while the little cow danced in towards the cliff until she was close under us, and then made off. We found that the bullet had struck the centre of the base of the neck, and the elk had died so instantaneously that his hind-quarters were still hoisted up by the stem of a young birch against which he had fallen under the edge of the bank. Of course in this case, being fired from above, the bullet penetrated downwards, but in my experience, confirmed by that of others, the neck-shot is with elk always very deadly. Even

when hit behind the shoulder they will sometimes travel a considerable distance, but when the lead strikes fairly in the centre of the broad neck, they usually drop within a few yards at the outside. In stalking, owing to the utilisation of knolls and other eminences already mentioned, a large proportion of shots are fired from above. Every big-game sportsman has his favourite battery, but it is as well to remember that the elk requires a heavy blow to knock him over and



Stalking elk.

save the trouble of pursuit, and that the vitality of the bulls is often very great, especially just before the rutting season. When hunting in the low forest and with the loose dog, it is seldom necessary to fire at over a hundred yards, and in every rifle used for elk the fixed back-sight and the bead, taken full and quickly, should together give this range. But on the higher and more open ground, the shooter must be prepared to accept fair chances at much longer ranges up to, say, four hundred yards. At this distance or thereabouts, anyhow with the corresponding sight up, I have myself been several times successful. Most Englishmen will employ a hunter or attendant, but it is scarcely needful to say that, with thoroughly trained and steady dogs, either style of pursuit may be practised alone. In stalking, the leader may be conveniently fastened round a tree or bush while the shot is taken. The shooter must not be over-sanguine of sport. If he spares cows and very young deer, and gets from four to six bulls during his thirty or forty days' season, he ought to be more than satisfied.

CHAPTER IX

EUROPEAN BIG GAME

By Major Algernon Heber Percy

BROWN BEAR HUNTING IN RUSSIAN LAPLAND

Ursus arctos, the bear of Northern Europe, exists rather plentifully in the forests to the extreme north of Russian Lapland. This bear is omnivorous: he feeds on roots, leaves, wild berries such as molte berries (which grow in large quantities in the Northern swamps), and is especially fond of the giant angelica, which occurs occasionally in patches. To salmon or other fish he is extremely partial, and I have seen places where he has been gorging himself on salmon on the Valasjok river, where the first fosse is divided into a large and small fall by an island in the middle of it. Salmon endeavour to go up both falls, and when the water is low the small fall ceases running and the pool below it drains out, leaving any fish that may be there imprisoned to die, a fact immediately taken advantage of by bears in search of dinner. Bears are carnivorous when they get the chance. The largest brown bear I shot in Russian Lapland measured 8 ft. from the tip of his nose to the tip of what we must call in courtesy his tail. Brown bears have the most extraordinary tenacity of life; no wound is instantly fatal except in the brain or spine, or incapacitates from attack, except perhaps if the bullet takes effect in the kidneys. The bear's enormous muscular strength is very apparent when he is divested of his warm fur coat; indeed the Russian Lapps, or 'Nortalash,' as

they call themselves, say that a bear has the strength of ten men and the wisdom of five. Consequently they fear him extremely and with good cause, I myself having seen a Lapp horribly scarred on the head and face by a bear. My own experience is that brown bears invariably charge, if they can, on receiving a bullet.

There are two ways of hunting the Northern brown bear which have proved successful for the single hunter: either by tracking the animal with a carefully trained dog, or by discovering the places where he finds some special delicacy, and waiting at a considerable distance for him to come to feed, then stalking him and getting a shot. Further south, in Norway, where there is a larger and settled population, a drive or 'clap-jaght' is often organised, but unless extremely well arranged by a person in authority who thoroughly knows the ground as well as the men and the habits of the bear, the drive in my perhaps unhappy experience is seldom successful.

Too often the drivers are armed with guns and rifles, and I have vivid recollections of spending an animated twenty minutes lying flat on my stomach with Remington rifle-bullets whistling overhead, and an excitable brother sportsman dancing to and fro with a double-barrelled rifle at full cock, jumping to fire at the first thing that stirred. I prefer less excitement, and less motion in the play. There is another method of hunting the bear, when he has hibernated in the den he has found during the autumn, carefully composed of moss and dry leaves, under some rock or tree root. This style of hunting I have not seen, but the Earl of Kilmorey has kindly forwarded me an account of it. As I said before, bears are excessively fond of berries, and nothing is more amusing than to come up to a bear which has made a really good meal, and having over-eaten himself with berries has been attacked by subsequent stomach-ache. His complaints, moans, and attitudes are so human as to be irresistibly ludicrous.

When I first went to Russian Lapland I walked many miles in the sun-lit nights of summer, tracking, or endeavouring

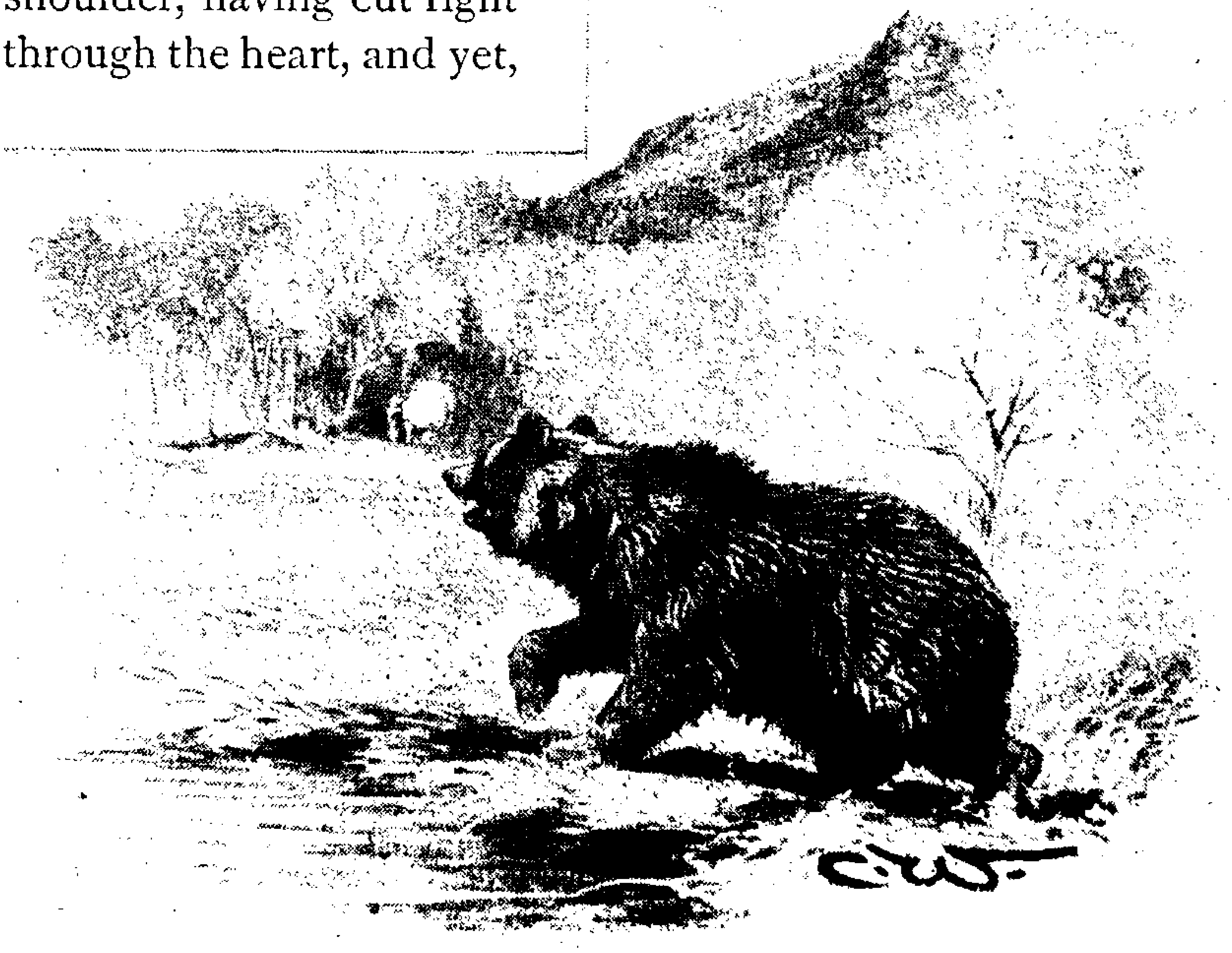
to track, bear, and I have also waited by calves and lambs tied up, but all without result; yet I have invariably been successful when I have found any quantity of angelica in a suitable country, and have watched it with glasses from a distance.

On August 1, 1873, my wife and I started from Pechinka Fiord with a fjeld Lapp, and rowed up a little river which runs into it till we could not use our oars; we then landed and *tracked* the boat as far as possible, and finally carried her bodily half a mile through the forest of birch, carpeted with quantities of yellow globe flowers, wild geraniums, red campion, and other flowers, to a large sheet of water, called by the Lapps St. Trefan's Lake. We pulled right up this lake to the extreme end (about seven or eight miles), trolling for trout on our way. To keep out in the lake as we did, in a small boat composed of four planks and a bottom sewn together with reindeer thongs, was, as I afterwards found out, an extremely risky experiment; for on a subsequent occasion, while crossing in the same boat, we were caught in the middle of the lake by a thunderstorm, accompanied by very heavy squalls of wind, which soon raised such waves in the fresh water that we had to bear up and run before it, the Lapp pulling all he knew, and my own strength being fully exercised with the steering oar to keep her dead before the wind, as the slightest coming to on either side must have inevitably ended in a capsize—no joke with a lady in the boat, in the icy waters of a lake 3° north of the Arctic Circle. However, I kept her straight until near the shore, which was rocky, when, seeing the water had shoaled, and that if we ran on at the pace we were going we must inevitably smash the boat, I caught hold of my rifle, sang out to everybody to look out, and turned her broadside on about six yards from the shore. We were swamped at once, but in water not much above our knees, so that we managed to catch hold of the boat, and carried her safely out.

However, on the date I am writing about we had no such adventure; the day was bright, and the scenery beautiful. At the end of the lake a huge terrace, covered with grass, extended

between two ranges of mountains, the terrace's top as level, and its side as accurate, as if made and turfed by a landscape gardener, the only difference being that it was about two hundred feet high. Behind it we could see mountain after mountain, their sides and summits, broken and jagged, extending far away. The ground between the terrace foot (from which, as from the bowels of the earth, a little river ran brawling to the lake) and the margin of the lake was covered with a dense forest of birch. This we passed through, and making a wide détour down wind, we climbed a hill behind and overlooking the top of the terrace. When we arrived there we saw on the top of the terrace some curious circular basins, all containing water. Their diameter would be about two or three hundred yards. A strong stream ran into the right-hand basin, but there was no apparent outlet to any of them. Doubtless the water from these basins fed the subterranean stream that issued from the foot of the terrace. All round the basins, and extending for some distance from the margin of the water, was a rank and luxuriant growth of giant angelica. Far down below us we could see with the glasses a magnificent reindeer feeding—a runaway from one of the tame herds, no doubt. We had a capital place, the wind blowing straight from the basins to us. Keeping a sharp look-out, we discussed some smoked salmon and bread, and had hardly finished it when suddenly a bear appeared, waddling with his quaint, slouching gait to the edge of one of the basins, where he began to feed greedily on the sweet angelica. I slipped down at the back of the hill, leaving my little party to watch him from the top. Getting quickly under cover of some birch-trees, I descended, silently crept up to the edge of the basin, and, peeping from behind a bush, saw him about 150 yards away, but his head was towards me; so, wishing for a better chance, I crawled back, and, making a circuit, got up again within eighty yards. This time his side was towards me, and I got a steady shot from behind the bush, aiming behind the shoulder. The bear sprang up with a loud roar, and, looking

round to see 'who hove that brick,' charged straight up the bank, getting my second barrel as he came. He charged thirty yards without a falter, and then suddenly collapsed and rolled over stone-dead. After loading I walked up to the bear, first throwing some stones at him to make sure he was not shamming, and found it was an old, large she bear ; that both my shots had hit her, the first behind the shoulder, having cut right through the heart, and yet,



'This time his side was towards me'

notwithstanding this and the second shot through the chest, she had managed to charge thirty yards apparently uninjured. We had much trouble to convey the head, skin, and some of the meat down to the boat, which was greatly overloaded ; but the weather was dead calm, so that, keeping close along the shore, with continual bailing, we arrived safely at the end of the lake, where, leaving the boat, we carried the trophy down to another boat on the Fjord, and so home about 2 A.M.

Next day several Lapps came and looked at the bear, and expressed themselves well pleased that she was killed. I noticed that when they saw the skin they invariably crossed themselves, and, if not prevented, spat at it. A Norwegian told me that the Lapps dread bears very much, and will not attempt to hunt them except in parties of five or six.

On another occasion a bear let me off in the kindest manner. My wife and I, our Norwegian servant and a Lapp, had ensconced ourselves in a good position, overlooking an excellent feeding place, and had hardly settled ourselves before we saw old Bruin come waddling down for his dinner. I was then shooting with a double-barrelled Purdey polygroove muzzle-loading rifle, a most excellent weapon, but requiring a nice adaptation of the sights for any distance over a hundred yards, and slow to load, the bullet having to be entered into the grooves of the muzzle by force. I now quote from my wife's journal :

A. then crept down to stalk him, leaving us on the hill holding our breath with excitement and lying with our heads over the side of the rock in front of us. A. made a good stalk, but was not able to get near Bruin on account of the wind, so he lay down in the grass and put up the 150-yards sight, took a steady aim, and pulled. The bullet, we think, must have hit the ground under the bear's foot, for afterwards, on looking over the ground, we found that the distance must have been at least two hundred yards, the line being partly over water, and very deceptive to the eye. Anyhow, up jumped the bear on his hind legs to look all round for the being who had sent that nasty whistling ball, and seeing no one, he began to move quickly off in the contrary direction to where A. lay hid. A. then let drive the second barrel, which turned the bear, who then made straight for him. A. was unable to see the bear on account of the scrub (though we could see perfectly well from our elevated position), and before he had time to reload, old Bruin appeared fifteen yards from him. Both were equally surprised at the meeting. A. stopped loading to pull out his hunting-knife, putting it into his teeth, expecting a charge, and then went on loading, and there they stood, man and bear, looking at each other for a full minute ; but before A. had time to get his muzzle-loader

capped, the bear had seen enough—had turned, and was off. We watched all his movements from the hill. It was so curious seeing him, the whole thing seemed all at once to flash on him, and then he was off; the more he thought of it the less he liked it and the faster he went, until at last he raced *ventre à terre*, jumping the fallen trees in his path. Once only, just on the brow of the hill, did he look back, and then away he went, faster than ever, and disappeared in the birch scrub. We then came down and hunted the birch scrub, with no results; but on one of the hills we found a place he was accustomed to lie up in, so snug, in between two rocks on the brow of the hill, where he could see all round him, and yet the rocks sheltered him. He had scratched up the moss and had made a soft bed, with a raised pillow at one end. It was a great pity that A. did not get him, for he was a very large bear, and must have been old, as he had such a white muzzle.

For myself, I confess I was glad that I had not touched him, as during the time we faced each other it was simply on the balance whether that inconvenient change was not going to occur when the hunter begins to be the hunted. I have since invariably shot with a Henry Express double-barrelled rifle.

Again watching a favourite feeding place in a similar manner, I saw a very large bear, and managed to get up to within a hundred yards of him, when he offered me a good side shot. I fired, aiming as usual behind the shoulder. On receiving my fire he charged straight at me, whilst I slipped in a cartridge to receive him. He charged fully forty yards at best pace, and, just as I was about to endeavour to give him a head shot, he reared straight up his full height, smashing down a young birch-tree with his weight, stone-dead. This was the largest bear I have shot. His heart was absolutely shattered by the Express bullet.

BEAR DRIVING IN RUSSIA

By the Earl of Kilmorey

No sportsman passing a winter in Russia should leave the country without trying his hand at bear shooting.

It is not necessary to go great distances from St. Petersburg to satisfy every desire, as plenty of bears are to be found in the enormous forests which still cover innumerable square miles in the immediate neighbourhood of the principal lines of railway. Moreover, to simplify matters for residents and foreigners alike, information concerning the whereabouts of bears is being constantly brought to St. Petersburg during the season, either by letter, or more often by estate agents or by the head-men of villages, who come up to the capital for the purpose.

Personal interviews are to be preferred, at which all the necessary arrangements can be entered into, prices fixed, contracts for beaters and sledges made, and a plan of campaign drawn out and agreed upon. The countrymen accustomed to this business not unfrequently exhibit considerable intelligence when an amount of organisation and generalship is required which would much interest and amuse our keepers and stalkers at home. Old hands always make payment by results the basis of their contracts, for disappointments are frequent, no doubt unavoidably so in some cases, though very often the unconscious sportsman is made to wade through the whole business of the *chasse*, everyone present, barring his innocent self, knowing full well that Mr. Bear *nyett doma*—i.e. is not at home.

Russians are beginning to fear that foreigners will soon spoil their sport, as foreigners usually do, by paying too much per pood for their bears, too much per diem for their conveyances, too much for their lodgings, and too much *na tchai* (tea money) at the close of the proceedings; but, under the direction of gentlemen who can speak the language fluently,

who understand the people and their peculiarities, and who are thoroughly 'posted' in the whole business, one cannot go far wrong. After six days' continuous sledging, we bagged four bears out of six promised, a fair average considering the market value of promises. For this sport we paid at the rate of ten roubles per pood, lodging, beaters and *na tchai* included, so that our bill only came to 60*l.*, which I do not think excessive, considering we covered over 400 versts, or about 260 miles. There is no doubt that the man you contract with makes a fine profit over the sledges, but I believe the money paid out is fairly divided among the beaters, and averages about 25 copecks a head, equivalent to 6½*d.* in English money.

Finding your bear depends mainly on the strict sobriety and untiring vigilance of the men employed as watchers during December and January.

As soon as the first snow has fallen, the villagers turn out in search of tracks, and when the animal's winter quarters have been approximately discovered, a circle is marked out, within which, unless fresh tracks indicate a move, the bear is certain to be enclosed. This is called 'ringing.'

Bears, unless wantonly disturbed, will scarcely ever move when they have once comfortably established themselves, though cases are on record where they have been known to sally forth with extraordinary caution in search of food; but as a rule they remain at home, content with the nourishment said to be derived from sucking their own paws. This being so, it is remarkable to find bears still in excellent condition after many weeks of somnolent starvation.

Should the watcher get drunk, as is not unfrequently the case in Russia as in other countries, and let the bear escape unperceived, or should he develop a desire to rival Ananias or Ah-Sin—a practice not altogether peculiar to the Russian peasant either—then the sportsman's lot is not a happy one.

A very favourable opportunity of securing several bears at no great distance from St. Petersburg having presented itself to me at the beginning of March 1889, I gratefully accepted

an invitation to join an expedition into the province of Novgorod, organised by Count Alexander Münster, son of the distinguished Ambassador of that name so well known to us from his long residence in England.

Our third 'gun' was M. Constantine Dumba, First Secretary to the Austrian Embassy, whose agreeable companionship added considerably to the pleasure of the trip.

With these gentlemen I arrived at Malo Vyschera, a station 152 versts down the direct line from St. Petersburg to Moscow, at 7.30 P.M., March 2/14, 1889, had supper, and after packing ourselves, our trusty benchmen, and our provisions into country sledges which baffle description, started *à la belle étoile* at 9.15 P.M. The moon was nearly at her full, the thermometer at $-9°$ Réaumur (about 9° Fahr., or 23 degrees of frost), and not a breath of wind. The sensation of gliding along through the silent night, comfortably wrapped up and extended at full length on the hay with which each sledge was amply provided, was most enjoyable. The weird beauty of the forest scenery by moonlight, the countless rows of dark firs, the silvery birches, the sudden clearings, all exciting the imagination, whilst the constant jolts and dislocation of the body, resulting in curses loud as well as deep, forbade sleep till the small hours. I had, however, begun to slumber, when we were tumbled out to change sledges at a small village called Falkova, at about 1.15 A.M. While fresh horses and drivers were being collected we had tea in the principal room of the posting house, which we found very clean, dry and comfortable. I am afraid we disturbed the family in their beds on the top of the stove, which may sound strange in English ears; but these stoves, being made of brick and cement and about the size of a pianoforte van, whole families can, and do, sleep atop of them without inconvenience. At 2 A.M., or a little after, we were again *en route*.

I have experienced extreme cold in various quarters of the globe, but recollections of nocturnal expeditions in Canada at Christmas time, and of middle watches on the fore bridge

rounding Cape Horn in May, fade into nothing compared with the memory of what the air felt like in the province of Novgorod in the early morning of March 5/18, 1889. We were covered with hoar frost, and our coat collars and comforters, where they crossed over our faces, were frozen as hard as boards. We calculated that the thermometer stood at –24° to –28° Réaumur that morning between three and five o'clock.

6 A.M. brought us to a waking village called Zaruchi, 72 versts (or about 48 miles) from Malo Vyschera, where we were not sorry to make a light breakfast of the inevitable tea. Here began what turned out to be our daily disappointments. Three bears, which we had fondly hoped to have encompassed and slain in that immediate neighbourhood, had been quietly disposed of during the past week to higher bidders, and three lynxes, said to have been seen not far off only the day before, were an hour later reported to have 'vamosed.' There was no good waiting any longer at Zaruchi, so as soon as fresh sledges had been provided, we started again on a 40-verst stage to Crasova. The rising sun changed the entire aspect of affairs; gradually the air got warmer, and very often in sheltered places the heat was almost oppressive. At Crasova, where we put up at the agent's house, we lunched and made arrangements to pass the night, and at 1 P.M. we started once more to drive 15 versts to our first bear. There is no denying that fatigue and sleeplessness were now beginning to tell, and that all hands were dog-tired; but excitement kept us up.

We arrived on our ground about 3 P.M., and, leaving our overcoats in the sledges, placed ourselves unreservedly under the direction of one Alexei Nicolaïevitch, as general of the division, his two brothers, Ivan and Dimitri, acting as brigadiers.

Before us was ranged the army of beaters, collected from the immediate district, some seventy to eighty persons of all ages, sorts, sizes and sexes, a goodly show. The beat on this, as on other occasions, was arranged in the shape of an

elongated square, the guns being placed in line at the end nearest the starting point.

The approximate position of the bear having been indicated in a hoarse whisper by Alexei Nicolaïevitch, he proceeded to post the guns. Having drawn lots before starting, as we do at home when grouse or partridge driving, I was No. 1, M. Dumba No. 2, on my left, and Count Münster No. 3, still further in the same direction, at, I believe, about fifty yards apart.

No. 1 has almost always the best of it, Alexei invariably posting him, as he thinks, right opposite the bear. It is from No. 1 that the army of beaters silently diverges, making a large circuit right and left, and meeting again at a point in the forest, perhaps a verst or more distant, far in the rear of the bear, facing the line of guns. When the wings of beaters meet, and the cordon is complete, the whole set up an appalling shout ; the far side gradually advances until the area enclosed is reduced to about half its original size ; then the beaters begin to draw inwards, shouting, screaming, snapping off old guns, and rattling sticks. After an interval of ten or fifteen minutes, according to the nature of the ground and the temper of the bear, he or she, as the case may be, begins to move, though sometimes the creature positively refuses to stir, actually seeming to prefer to be shot sitting.

The yelping of a dog who had attached himself to our party—a sort of stunted, wiry-haired, wolfish-looking collie—very soon gave notice that the bear was afoot, and she (for it proved afterwards to be a she bear) appeared suddenly among the trees right in front of me, about eighty yards off : a poor harmless, distressed-looking object blundering along in the deep snow. Bears move a great deal faster over the ground than they seem to do, and having selected a convenient clearing not twenty yards off as a good place in which to cover her, I had not long to wait before she tumbled headlong into it over the stump of a big tree. This sudden and unexpected fall at the moment of firing rather disturbed my aim, and the

bullet struck her somewhat higher than I had intended, going bang through her, ripping up the muscles of her back, and bringing her to the heraldic position of '*ours couchant.*' The novelty of the situation, my inability to see my companions, and my ignorance in concluding that one shot is ever sufficient, except in a vital spot (it is not always so then), deterred me from firing again, as I ought to have done; and in the exuberance of my spirits I was about to run in and 'put her in the bag,' when she got up, and, moving a pace or two forward, received her quietus through the heart at the hands of M. Dumba, who was only a few yards off.

Immediately a bear is defunct a curious scene takes place. The beaters run furiously together, all radiant with joy and streaming with perspiration. Many of them cross themselves devoutly, and sing a melancholy ditty descriptive of the death of their enemy. As every male peasant in Russia carries an axe, and has a long scarf bound round his greasy sheep-skin coat, in less than no time a young tree is cut down and fashioned into a convenient pole, and the bear's legs being made fast over it with one or more scarves, the triumphal procession staggers through the snow towards the nearest sledge. This, our first bear, weighed $5\frac{1}{2}$ poods, i.e. about 15 stone, and was light in colour, as bears generally are in the province of Novgorod. The heaviest bear shot during the expedition weighed $6\frac{1}{2}$ poods, or about 260 lbs. (40 Russian pounds go to the pood).

One word of advice in conclusion: when a bear is crossing in front of you, there is no time to lose if you have—if only for a second or two—the clear space between you and him, which you ought to try for. Two seconds before he 'opens,' he will be sheltered from your fire in the thicket to your right, and in two more, if you hesitate, he will be out of range again in the trees to your left; and if he is coming straight to you, aiming is not as easy as may be supposed. The poor brute goes floundering along, with a pitching motion not unlike that of a waterlogged ship in a heavy sea. At one moment he is crawling

awkwardly over a fallen tree, at the next he is almost lost to sight in the deep snow. It is on such occasions more than any that the sportsman must remain cool. More shots have been clean missed at close quarters than at thirty and forty yards, and though as a rule the animal's sole idea is how to escape from the din around him (the idea of attacking his disturbers rarely occurring to him), still instances have been known, and not unfrequently, when an old she bear with cubs has stood up and charged. Poor thing! she has not much chance against two rifles, a bear spear, a long hunting-knife and a revolver, which generally constitute the equipment of a *chasseur d'ours.*

AUROCHS HUNTING

BY MAJOR ALGERNON HEBER PERCY

The European bison, or aurochs, *Bison Bonasus*, which used to roam in large herds over Europe, is now exclusively confined to the forest of Biolvitskia, in Lithuania, where it is known by the name of zubr.[1]

It has long been protected and preserved here most strictly, and has been kept solely as a royal quarry, certainly from the time of the kings of Poland.

Its habits appear much to resemble those of the wood bison of America now almost extinct; for example it makes itself mud baths like the well-known buffalo wallows in the plains of North America. Heads of these magnificent animals being excessively rare, I give the dimensions of the bull and cow which I killed and have now set up:

	Bull	Cow
Tip of horn to tip of horn	$18\frac{1}{2}$ ins.	6 ins.
Base of horn to tip round curve outside .	$17\frac{1}{2}$ "	$15\frac{1}{4}$ "
" " inside .	$13\frac{1}{2}$ "	10 "
Circumference of horn at base . . .	10 "	8 "
Across forehead	13 "	10 "

[1] Unless the Caucasian zubr, of which Mr. St. George Littledale had recently killed a specimen, be (as the Caucasians maintain) identical with the Lithuanian beast.—C. P.-W.

In August 1879, by Lord Dufferin's great kindness, I received permission from the then Emperor of Russia, Alexander II., to visit the forest of Biolvitskia to hunt aurochs, and was directed to call on the Minister of Domains in St. Petersburg for directions when and where to go. The

Group of aurochs

Minister, M. Walouieff, was most civil and kind; indeed, I may say at once that I met nothing but the most extreme kindness and hospitality from all Russian gentlemen during my visit to their country.

Accompanied by my wife and a courier I arrived at Grodno, where I had expected to have a keeper put at my disposal to assist me in finding and stalking the bison; but was rather

taken aback at being met at the station by the Governor-General de Ceumern, the Minister of Domains of the province, and a posse of gendarmes.

On the night of our arrival, the Governor-General and Madame de Ceumern entertained us most hospitably, and on the morrow, together with the Minister of Domains, accompanied us by rail to the station nearest to the aurochs forest. From that station we drove to the house of the forest ranger, M. Campione, and there supped.

I found that all preparations had most kindly been made for me, and after supper with the Campiones we drove on through the forest, which was lovely in the moonlight, the white rays shining through the leaves here and there, lighting the gnarled trunks of the trees with a touch of silver, anon bursting through a glade and throwing a weird gleam on the mist hanging by the little streamlets, and then at a turn of the road (the moon being brought in front of us) making the most lovely vistas of interwoven branches and leaves, in black on a silver ground.

We arrived late at the Czar's shooting palace, a small but most comfortable house standing in the centre of the forest, where we were luxuriously put up.

The next morning I carefully unpacked and overhauled my rifle, a Henry express made especially for me. I have shot with it a good many years, and believe that a small weight of lead properly placed—but I will not bore my readers with the old arguments. After breakfast the Ranger, the General, and Madame de Ceumern accompanied us to one of the keepers' houses where we were to wait. It was a small cottage, and I fear the entrance of our party disconcerted the chasseur's wife, who, poor woman, was standing by the swing cradle of her newly-born child. As the woman bowed repeatedly when we came in, I laid a few rouble notes on the coverlet, asking Madame de Ceumern to explain that they were for a christening present. This she kindly did when, to my horror, the mother prostrated herself before me, and en-

deavoured to kiss my shooting-boots. I hopped backwards round the room like a hen, and the grateful female on hands and knees after me. The rest of the party seemed to enjoy the incident too keenly to answer quickiy to my frantic appeals to them to tell the good lady to desist; but, as luck would have it, she never caught me, only very nearly, for she went with remarkable ease and speed on her hands and knees.

Soon after this M. Campione came in and told us that we must take our positions, whereupon my wife and I proceeded with M. Campione and a chasseur to my post, by a large uprooted tree at some distance from the hut. The forest was here rather open; on my left stretched a small glade, which gave me a clear view of anything crossing it to a distance of about two hundred yards. On the right, though the trees were fairly thick, there was but little underwood. In front the bushes and undergrowth were much denser, but the ground sloping away from where I stood gave a view of a small clearing about three hundred yards off. Between this clearing and my right and left I could see nothing but underwood.

A great many of the large forest trees were magnificent limes which supported quantities of wild bees, of which there are so many in the forest that men were employed to rob the nests of the honey. M. Campione explained to me in a whisper that they were trying to drive the aurochs past me, the wind being light from the front. We waited in perfect silence for about half an hour, and then I heard the breaking of sticks and crashing of branches, as the herd approached at a gallop. Across the clearing they came, heading to pass me on the left across the small glade. There were about fifteen of them, all thoroughly alarmed, and presenting exactly the appearance of a herd of American bison, the same carriage of the head, and the tail carried in the same manner. Though I had but one short view of them, one bull immediately caught my eye as being much larger than the others. As they crossed the glade almost in file, he was the second, and M. Campione whispered '*Le second c'est le vieux, tirez-le!*' At that moment they disappeared in the brushwood,

but I could hear them coming straight on towards me, so cocking my rifle, I waited for them to cross the glade to my left. Louder came the noise of the crashing of branches ; and out burst the leading aurochs across the clearing about eighty yards from me, closely followed by the second and remainder

Aurochs' heads

of the herd. Directly the second appeared I fired at it, and rolled it over. Reloading quickly, M. Campione and I ran up, and found I had shot an old female aurochs, the bull having changed his position while passing through the underwood. 'Stand still,' said M. Campione, 'they may come by us again' ;

and, turned by a hideous din, shouts, noises, and whooping, the scattered herd reappeared, galloping wildly by us on either side. '*Le voilà*,' said M. Campione, and there could be no mistake this time; for, facing as I was, the forest was clearer, and I could see him distinctly, a grand beast, his tail jerking up over his back in anger, about sixty yards from me, giving me a perfect side shot, of which I made the most, rolling him over with a bullet behind the shoulder. The death holloa was given by M. Campione, and by-and-bye appeared quite an army of chasseurs and beaters. I at once set to work, after all congratulations, carefully to cut the skin low down on the shoulders so as to get plenty of neck, the appearance of so many good heads being entirely ruined by not having sufficient neck to set them up with. This bull was one which had become well known, and I was told that several applications had been made to St. Petersburg that the chasseurs might shoot him, as he was dangerous, and had injured, if not killed, several people. He was much larger than any American bison I have shot or seen; his hair was finer, longer, and not so curly; his colour was a shade lighter, and his horns do not curve at the same angle as those of *B. americanus*. I noticed a strong aromatic smell about both bull and cow, which they get from a peculiar grass that grows in the forest called zubr grass. I was informed the aurochs are very fond of it. I picked some of it and found that it resembled ribbon grass, but the blade was all green, and had the same strange aromatic smell which I noticed in the aurochs. The height of the bull at the shoulder was about six feet, but he gave me the idea of being a leggier beast than the bison of America. I saw no difference between him and *B. americanus* which could not be accounted for by climate and habitat. The differences between European reindeer and American barrenland and wood caribou are certainly greater, and the differences between European elk and American moose are quite as great. I explained to General de Ceumern that I had only permission to take the head and skin of the bull, and

that I did not consider myself justified in taking that of the female as I had not received the Czar's permission, but some little time after my arrival at home in England the cow aurochs' head was by order sent to me, set up, mounted by a Warsaw taxidermist.

The lynx (*Felis pardina*)

CHAPTER X

THE LARGE GAME OF SPAIN AND PORTUGAL

By Abel Chapman and W. J. Buck

Though comparatively near 'home,' Spain is but little known to the mass of English sportsmen. Its game laws are not such as to deter the foreigner from visiting its shores, and its game list is a fairly long and interesting one; but such sport as Spain offers is mostly 'driving'—a sport exciting enough in itself, but not to be compared with stalking or still hunting. Besides this, sport in Spain is expensive. As for the ibex of the Spanish highlands, a competent authority states that every ibex shot in Spain by our English sportsmen fr● Gibraltar costs at the lowest computation 100*l*.

In principle, if not in practice, the game laws of Spain resemble our own, recognising a vested right of chase in the owner or occupier of the land.

Nominally it is illegal to enter upon any private lands in search of game without a written permission from the owner; but practically the sportsman goes wherever he pleases throughout the length and breadth of this sparsely peopled country, except only in the case of *cotos* or preserves.

This is an important exception to the big game hunter, for nearly all the regions frequented by red deer, at any rate, are strictly preserved, and wholly forbidden ground to the casual stranger. The snow-clad Alpine regions where the Spanish ibex and chamois are to be found, and a few remote haunts of roe deer and pig among the Sierras, are free to all comers, but the difficulty and expense of arranging drives and of camping-out in these distant regions are very great.

The Government of Spain is unusually civil to aliens, making no special stipulations with regard to their sporting rights. Like everyone else in Spain, the foreigner who wants to shoot must take out a licence to carry a gun (*uso de escopeta*) and to kill game (*cazar*). The cost of this is 25 pesetas. In addition to this, each municipality has power to levy a tax in the form of a licence, giving the holder a right to shoot over all lands belonging to the municipality the sporting rights of which have not already been leased. An Englishman furnished with a letter of introduction from his consul would experience no difficulty in obtaining such a licence.

The close-time for large game is, as regards certain northern provinces (Galicia, the Asturias and Santander), from March 1 to September 1, and for the rest of Spain and her Mediterranean islands from February 15 to August 15, but it is to be observed that the law as to close time does not bind game-preservers in their own preserves.

This, in brief, is almost all that an Englishman need know of the game-laws of Spain, although perhaps these two quaint clauses (Arts. 37 and 38 Consolidated and Amended Game Law, January 10, 1879) might affect him:—

37. A sportsman who wounds a beast has a right to that beast so long as he, either in person or by his dogs, is in pursuit of it.

38. If one or more beasts are put up by a sportsman or party of sportsmen, and these beasts, being neither wounded by them nor their dogs, are subsequently killed during their flight by another party, those who have killed the game have an equal right to it with those who first aroused and pursued it.

But the wandering rifleman has little to fear from the law in Spain; on the contrary, if an expedition is planned and carried out with due formality and regard to other people's feelings, permission to shoot anywhere is rarely refused, assistance even being offered as often as not by the proprietor to the invader.

Spanish sportsmen count the varieties of *Caza mayor*, or larger game, in their peninsula, to wit, red deer (*Cervus elaphus*), roe deer (*Cervus capreolus*), fallow deer (*Cervus dama*), chamois (*Antilope rupicapra*), Spanish ibex (*Capra hispanica*), bear (*Ursus arctos*), wolf, fox, lynx (*Felis pardino*), and wild boar.

Of these lynx and fox are only reckoned as large game when killed by a rifle ball, while fallow deer can hardly be said to exist in Spain in a truly wild state, although they come near to it in Aranjuez, where they live free and unenclosed.

As suggested before, 'driving' is the commonest form of sport in Spain, but there are two or three old forms of national sport still alive in the country, more picturesque and more in keeping with the popular ideas of the chivalrous Spaniard.

Of these the *chasse au sanglier* in Estremadura, and the pursuit of the bear by the *oseros* of the Asturias, are worth a passing notice.

When the acorns are falling from the oaks during the stillness of a moonlit night in the magnificent Estremenian woods, and the ripe chestnuts cover the ground, the *valientes* of the district assemble and wait for the boars to come down from their mountain fastnesses to feed. As soon as the snapping of some dry twig announces the 'javato's' (boar's) approach, a hound trained to give tongue to boar only is slipped, and as

soon as his first note proclaims a find, a dozen strong half-bred mastiffs are despatched to his assistance.

Then for a while the hound-music frightens the shadows and shocks the silence of the sleeping woods; there is a crashing among the dry forest scrub, a breakneck scurry of mounted men among the timber; then the furious baying of the hounds and the noisy rush of the hunters converge towards one dark point among the shadows, and in the half light a great grizzly tusker dies beneath the cold steel, but not before he has written a lasting record of the hunt on the hide of some luckless hound. Pig-sticking proper, as practised in India, is not known in Spain, though possibly it might be practicable on the plains of Andalusia.

The bears of Spain are of two varieties—the large dark-coloured beast known as 'carnicero,' and said to prey upon goats, sheep, pigs, and even to pull down horned cattle upon occasion, and a smaller, lighter-coloured bear called 'hormiguero' or ant-eater, which is common in the Asturias, feeding upon roots, ants, and such-like humble fare.

Bear hunting in Spain is confined almost exclusively to the north, to the Pyrenees and Cantabrian highlands. Among the Asturias a kind of hunting brotherhood of peasants still survives, whose members face the bear armed only with pike and knife. These men (*los oseros de España*), with the assistance of a couple of sturdy dogs, seek out their quarry amid the recesses of the mountains, and slay or are slain in single combat. Their equipment is simple. A broad-bladed knife and a double dagger, each of whose triangular, razor-edged blades fits into a central handle, suffice them for weapons of offence. For defensive purposes they wear a thick sleeve composed of many layers of coarse cloth.

When the bear is brought to bay by the dogs the hunter rushes in; as the bear rises to grip his new assailant the *osero* plants his knife in Bruin's chest, and then, as the animal lowers his head for a moment beneath the pain of the blow,

the double dagger is driven home to the heart with all the power of the *osero's* right arm.

This kind of bear-hunting is hereditary, the profession of *osero* passing from father to son with the peasants of the Asturias; but for the most part the bear is killed like other game in Spain, by means of large organised 'drives' or *batidas*.

Red deer are found locally and irregularly over several provinces of the Peninsula, differing in type from Scotch red deer in the absence of the shaggy mane or ruff on the neck, and in some slight modifications in the horns. Being chiefly forest deer their heads are narrow, and the animals slim built and game-like. They are found both in the mountains and among the extensive pine forests and scrub-covered plains; but the finest heads are obtained in the Sierra Moreña, to the west of Cordova, though the deer are most numerous in the southern wooded plains of Andalusia, in which part of the Peninsula the writers of this chapter, forming two of a party of eight or ten guns, have killed from twenty to thirty stags in a week's shooting, besides wild boar, lynx, and other beasts, and between sixty and seventy stags in a season.

Deer shooting usually begins in November and ends in February or early in March.

The following are measurements of heads that we have had the fortune to obtain in Andalusia. Though not the largest known, they are good typical heads:—

Forest Deer

	Length	Circumference	Beam
No. 1, 8 points (small) .	$17\frac{3}{4}$ ins.	$3\frac{1}{2}$ ins.	$16\frac{1}{2}$ ins.
" 2, 11 " . .	$24\frac{1}{4}$ "	$3\frac{3}{4}$ "	$19\frac{1}{2}$ "
" 3, 12 " (royal) .	29 "	$5\frac{1}{4}$ "	25 "
" 4, 13 " " .	$22\frac{3}{4}$ "	$4\frac{1}{16}$ "	$22\frac{1}{2}$ "

Mountain Deer

	Length	Beam
No. 1, 12 points . . .	34½ ins.	32 ins.
„ 2, 12 „ . . .	36 „	34 „
„ 3, 15 „ . . .	37½ „	34½ „
„ 4, 17 „ . . .	40 „	36½ „

Of the Spanish chamois there is little to be said. He is more or less common in the Pyrenees, where the French call him the 'izard,' the Spaniards 'rebeco,' and in the Cantabrian highlands, especially about the Picos de Europa, where he is ignobly slain by driving.

But the great prize of Spain to men of our craft is the ibex—the 'Cabra montés' of Andalusia, the 'bucardo' of Aragon. The Spanish mountaineers do not much affect ibex hunting, though there are a few hardy souls among them who, donning their *alparagatas*, or hemp-soled sandals, make a living out of this most fascinating of field sports.

The ibex is found on the highlands of Spain from Biscay to the Mediterranean, and from the Pyrenees to the Straits of Gibraltar, as also on the hills round Andorra, on the mountains of Toledo, and along all the elevated cordillera of central Spain ; but its favourite haunt is the Sierra de Gredos. This lofty sierra is the highest point of the Carpeto-Vetonico range, extending from Moncayo through Castile and Estremadura, and forming the watershed of Tagus and Douro. It separates the two Castiles, and passing the Portuguese frontier is there known as the Sierra da Estrella, which, with the Cintra hills, extends to the Atlantic seaboard. Along the whole range of this extensive Cordillera there is no such favourite ground for the ibex as its highest peak—the Plaza de Almanzor. During the winter months the ibex are found on the lower slopes of the range towards Estremadura, but in summer and autumn herds of them, especially the males, make their homes in the environs of Almanzor. The best time for ibex shooting in

Spain is during the months of July and August. Heavy snowstorms make sport in the winter dangerous and uncertain.

With regard to the specific distinction of the Spanish ibex, some authorities have held that the ibex of the Pyrenees differs from that of the Sierra Nevada and southern mountains, the former animal agreeing more with the typical ibex of the Alps.

Sir Victor Brooke, in a note just received, remarks, 'The Pyrenean ibex are much larger beasts than those of the southern Spanish Sierras. In the Pyrenees they are scarce, and live in the worst precipices I ever saw an animal in—they go into *far* worse ground than the chamois, and are very nocturnal, never seen except in the dusk or early dawn unless disturbed.'

We, however, have found no material difference in the form of the horns of ibex from the Pyrenees and those from Central and Southern Spain. The following are the maximum dimensions of six ibex heads from these latter districts, all measured by the writers :—

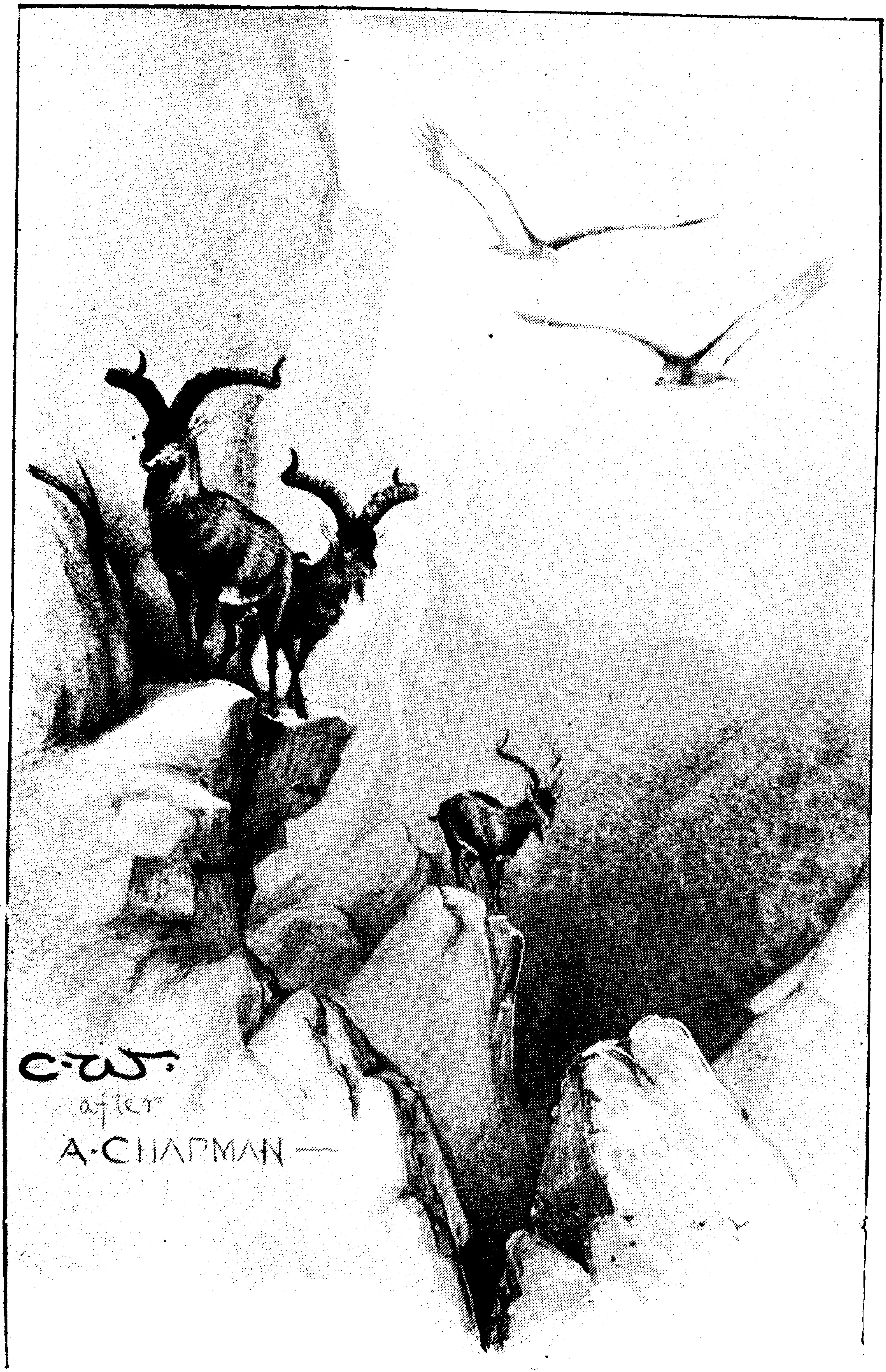
Measurements of Six Ibex Heads

	Age	Length	Sweep	Circumference
No. 1 .	5 years	18¼ ins.	11½ ins.	9⅝ ins.
„ 2 .	8 „	27½ „	23 „	9 „
„ 3 .	8 „	28¼ „	19 „	8¾ „
„ 4 .	8 „	29 „	18¾ „	9 „
„ 5 .	Aged	29 „	22½ „	9¼ „
„ 6 .	„	29¼ „	23¼ „	9½ „

All these were shot on the Central and South Spanish sierras.

The following are the measurements of Sir Victor Brooke's three best Pyrenean ibex heads :—

	Length	Circumference	Sweep
A	26 ins.	10 ins.	21 ins.
B	29 „	10 „	23 „
C	31 „	8¾ „	26½ „



SPANISH IBEX
(*Capra hispanica*)

[It may be added that the writers of this chapter devoted almost the whole of 1891 to the investigation of the natural history of this little-known corner of Europe, so that those specially interested may supplement this sketch by a study of their work, 'Wild Spain.'—Ed.]

CHAPTER XI

INDIAN SHOOTING

BY LIEUT.-COL. REGINALD HEBER PERCY

I. INTRODUCTORY.

IN dealing with such a vast tract of country as India it is out of the question to describe any one class of outfit which will suit the traveller equally well among the snowy peaks and bitter winds of the Himalayas and Ladak and in the furnace-like heat of the plains. Snow is the great obstacle to travel in the former, whilst heat, rain, and malaria are the evils to be contended with in the latter. Nor is one class of weapon equally suitable everywhere. For all soft-skinned animals, such as tigers, and all varieties of sheep, goats, and deer (except sambur) there is no rifle, in the writer's opinion, that is so satisfactory as a ·500 Express with a charge of at least $5\frac{3}{4}$ drachms of powder. This weapon is sufficiently powerful for any beast to be met with in the Himalayas. Of course, yak may be found, but the chance is so remote that it is barely worth while taking a special rifle for their benefit, and a few cartridges with solid bullets for the ·500 will probably meet all requirements. On the other hand, for thick-skinned animals, such as elephants, rhinoceros, gaur, buffalo, and sambur, the smallest bore of any practical use is a 12-bore, and the powder charge for this should be at least 6 drachms. The light bullet of an Express is so easily turned by a small twig that it is absolutely untrustworthy among heavy timber, and it is for this reason that the writer includes sambur with the larger animals. For the big

dangerous beasts a still heavier weapon, such as an 8-bore with 8 drachms of powder, is desirable, though not absolutely necessary, as the superior accuracy and handiness of a 12-bore go far to counterbalance the extra power. For antelope and gazelles the writer prefers a light single-barrelled ·400 Express, taking 3 drachms of powder, to any other rifle that he has ever used.

So far for rifles. A shot-gun is a necessity everywhere, and one of the best pot-hunting guns (the chief use of a gun on the trip after big game) is one of three barrels—two shot, 16-bore, and a ·450 rifle underneath—which will meet all requirements on the march and near camp. As regards tents, the ordinary Cabul tent (part of every officer's equipment in India), with a smaller one for the servants, is ample for the Himalayas and the plains in the cold weather, but a larger tent is required during the hot weather in the plains. Manifold are the instructions already published as to outfit—'Large Game Shooting,' by Colonel Kinloch, 'The Sportsman's Guide to Kashmir and Ladak,' by Major Ward, and 'The Sportsman's Vade Mecum,' by K. C. A. J., are among the best books to consult, as they are written by practical men. Among the points that the intending traveller must bear in mind are: That the unit of transport in the Himalayas is the coolie, and his load over a snow pass is only 50 lbs., though along an ordinary road he can carry 60 lbs. Pack animals can certainly be used over a large portion of the country, but every snow pass forces the traveller back to the unit, so that his baggage must be capable of being arranged in 50-lb. loads. Throughout the rest of India carts can generally travel, and, failing them, camels, oxen, or ponies can always be procured, so that the unit of transport being greater, the sportsman can travel with far greater comfort than he can in the Himalayas. Then, again, if the traveller requires more than sixteen coolies to carry his baggage in the Himalayas, he will be subjected to endless delays at every changing station. A dozen men or so can be collected at short notice almost anywhere, but over sixteen generally means delay

till they can be summoned from outlying villages; and perpetual detentions of this class when one is racing for ground are extremely annoying, so that it should be the sportsman's aim to combine lightness with efficiency in all articles of his outfit, and to travel with the smallest amount of state compatible with his standard of comfort—a standard which, in the writer's experience, differs with every individual.

As regards expenses, the following may be taken as a rough guide throughout the Himalayas:—

Coolie, per march, 4 a.

Coolie, monthly, Rs.6 (without rations if employed near his own village).

Coolie, monthly, Rs.5 (with rations).

Baggage pony, per march, 8 a.

Riding pony, per march, R.1.

Baggage yak, per month, Rs.8 to Rs.12 (the drivers bring their own food and provide carriage for it).

Head shikari, in Cashmere, Rs.20 monthly (with rations).

Assistant shikari, in Cashmere, Rs.10 monthly (with rations).

Luncheon coolie, in Cashmere, Rs.7 monthly (with rations).

Head shikari in Gurwhal, Chumba, Lahoul, &c., being local men, Rs.12 to Rs.16 monthly (usually without rations).

Assistant shikari, Rs.8 to Rs.10 (without rations).

Luncheon coolie, Rs.7 (without rations).

Rations consist of 4 lbs. daily of flour or rice for head shikari, assistant shikari, luncheon coolie, and servants brought up from the plains; baggage coolies get 2 lbs. daily of the same. An estimate of Rs.300 a month should amply suffice for travelling in any part of the Himalayas: an old hand will do it for far less, but the Cashmere shikari so thoroughly understands the art of running up the bill, and is so plausible withal, that the majority of his employers will find themselves paying more than its market value for the pleasure of his company. When the sportsman has sufficient experience and sufficient knowledge of the language to employ shepherds

THE FIRST STALK OF THE SEASON

and local shikaris to show him the ground near their own homes, he may dispense with the luxury of having a Cashmeree to rule over him, and find great advantage accrue both to his sport and to his purse. It is impossible to give an estimate for big game shooting in the plains, as the rates for transport and beaters vary in every district. As regards servants brought up from the plains, two should be enough, and they should be of the same religion and caste, so as to be able to cook for one another: the writer prefers Mussulmans, as they will eat meat, which Hindus of good caste will not do. In any case they will require extra pay in the hills (an additional Rs.2 or Rs.3 a month should suffice), warm clothing, an extra blanket apiece, and a waterproof bag to pack their things in. Also, as their work begins on arrival at camp, they should, if possible, be mounted for long marches. It is a good plan to hire milch goats from the village which supplies the coolies, and change them when one changes the men in the next district.

The generally accepted rule with regard to shooting grounds in the Himalayas is that the first comer has the right to any minor stream not being the main river of a district (except at its source, where it is considered a minor stream), and to all the land that drains into that stream; but he must occupy the ground in person, and cannot retain it by sending servants or tents there before his arrival, or by keeping servants or tents there during his absence.

In the plains the same rule, though not so accurately laid down, holds good in spirit, viz. that no sportsman should hunt over ground within reach of his neighbour's camp, and in tiger shooting a beat belongs to the man whose shikaris are tying up for it.

Visitors from home should endeavour to bear in mind that the sport of India naturally and fairly belongs to those who spend the best years of their lives in administering and garrisoning it, and that the assistance they will, as a rule, so freely receive will be given by good sportsmen from sheer love of sport.

In conclusion, the writer begs to express his grateful thanks for the kindly assistance afforded him by the authorities of the Natural History Museum, the Cambridge Museum, and the Senckenburg Museum, Frankfort, and also to the numerous sportsmen and owners of private collections for the generous way in which they have, at no slight trouble to themselves, lightened his labours by contributing records of sport and measurements of horns and animals.

II. THE BEARS OF INDIA AND BURMAH

There are no fewer than five varieties of bears to be found in our Eastern Empire. The three most commonly met with are the Himalayan black bear, *Ursus torquatus* (native name 'Kala Bhalu'); the Himalayan snow bear, *Ursus Isabellinus* (native names 'Lal Bhalu'; Cashmere 'Harput'); and the sloth bear of the plains, *Ursus labiatus* (native names 'Bhalu,' 'Reech,' 'Adam zad').

The Himalayan black bear is common enough on the southern slopes of the Himalayas, but rarely crosses the main snow-line. Being chiefly a fruit and corn eater, in contradistinction to the snow bear, whose main food consists of grass and roots, it likes to live near villages, especially when the maize crops are ripening. Dense jungle is a necessity to it for shelter during the day and for the wild fruit and berries it lives on before the crops are ripe, and this jungle is non-existent on the northern side of the main range. The snow bear is found on both sides of the range, but does not extend to Ladak. Both black and snow bears will kill cattle and sheep if they get the chance, and neither variety is above eating carrion. The black bear with his short sturdy nails climbs readily, while the long digging claws of the snow bear prevent him doing much in that line, though he is said to be able to climb a little. The villagers in the Himalayas have to keep their bees inside their houses both for the sake of warmth in winter and also to prevent the hives being robbed by bears. Both varieties hibernate,

A FAIR CHANCE AT BLACK BEARS

but Colonel Kinloch points out, and all natives agree, that while the snow bear is never seen abroad in the winter, the black bear periodically wakes up and makes short excursions for food and water. As regards their comparative ferocity, the snow bear, being generally found and shot in the open, rarely has an opportunity of doing mischief, though he will occasionally show fight. The black bear, on the other hand, from living near villages has partly lost his fear of man, and though he rarely if ever goes out of his way to attack, he will charge freely

Snow bears

if cornered, or suddenly disturbed in his mid-day siesta by anyone walking almost on to him. This is almost invariably the reason wood-cutters and herdsmen get mauled.

One of the best ways to shoot black bears is to have them marked down into ravines or patches of dense jungle on their return from feeding in the early morning, and to wait for them to draw out in the evening just before sunset. As a rule Mr. Bruin is pretty punctual. Shooting bears by moonlight when they are feeding in the fruit trees is generally unsatisfactory

work, as so many escape wounded, and having the jungle driven usually ends in disappointment.

The snow bear is easily stalked on the open slopes he frequents, and provided that the wind is favourable, and that the sportsman remains absolutely motionless as long as the animal's head is turned towards him, he can play almost any trick with a bear, even though standing in full view; but he must be careful not to let the sun shine on the barrels of his rifle, for that at once attracts attention. The best place to find a snow bear is one of those patches of bright green grass that mark the spots where sheep have been folded the year before. The writer knows several instances of black bears having been followed into their caves and shot there under circumstances of intense excitement. Colonel Howard, whose adventures with sloth bear are narrated below, had a sparkling time with a Himalayan black bear in a cave; but it is not everybody's sport.

Few men, after they have procured a good specimen or two, care to shoot bears. Their skins require more attention than they are worth, and on good shooting ground where snow bears are most common, it is rarely worth the risk of disturbing a good ibex or markhor for the biggest bear in Asia.

Jerdon remarks of the black bear—and the natives of Chumba at all events thoroughly believe it—that when one is caught in a rope snare, if he cannot break it by the first effort he will not try again, but will remain on the spot moaning and looking at the imprisoned paw without attempting to bite the rope.

The sloth bear is the common black bear of Central and Southern India. It extends to the base of the Himalayas, but does not ascend them, its northern limit being about 31° N. Lat. Its long flexible snout and long claws distinguish it at once from its Himalayan cousin, and though it delights in a temperature more suggestive of the necessity of punkahs and ice than of greatcoats, its fur is longer and better. In spite of its long claws it climbs well, and as, like deer and natives, it delights in the nasty-tasting flowers of the 'mhowa' tree, a

moonlight stroll in March or April, when the blossoms are falling, will often afford the chance of a shot. The best way of hunting these bears is to have them marked down in the early morning like *U. torquatus*, and then either to stalk or have them driven. Should the bears go into caves, they are easily dislodged by poking sticks or rolling stones through fissures above, or if the cave is shallow a bundle of rags or a turban dangled over the entrance and a few shouts will fetch them out. A firework thrown into or a shot fired down the mouth of the cave is a very effectual summons. Though *U.*

A glorified comet

labiatus is both willing and able to do a good deal of mischief, if due precautions are taken few branches of sport afford such a succession of ludicrous episodes. Poor old 'Adam zad,' if he is not witty himself, is a fund of merriment to others. Forsyth's and Sanderson's books teem with comical situations. The companionship of a fellow-sportsman whose shooting can be relied upon is necessary if full enjoyment of the sport is desired, as tricks may then be played which would be a little too risky to attempt single-handed. Native fireworks, 'Anar,' are rather dangerous to use, as they are apt to explode in the

hand. Never will the writer forget seeing a lot go off in a howdah during a tiger beat: the poor old elephant went streaking across country like a glorified comet. Two guns are ample for following up a wounded bear on foot in jungle; if there are more the party is apt to get separated, and then, if the bear shows sport, there are too many bullets flying about to be pleasant. Natives, except perhaps one tracker, are only encumbrances. The way a cub will ride on its mother's back and keep its seat under the most trying circumstances is marvellous. The writer once rolled an old bear clean over without the cub letting go. Sterndale quotes a capital story about this. Rusty coloured bears are not uncommon: the writer saw two in Central India, but as in each case the bear passed under his tree before the tiger in the beat had been fired at, he had to spare them. Bears may occasionally be ridden down and speared, but they are not often found on ground that will admit of this, and the way they '*sling their chat*' will prevent most horses from going up to them. This bear does not hibernate.

Colonel Howard gives the following account of his experiences in Central India in 1884:

L. and I were at Lulliapoora tying up for a tiger, and hearing of some bears' caves about two miles off, we rode out to look at them. On arrival at the ground we dismounted and strolled along, accompanied by a couple of villagers. Whenever we found a cave we rolled rocks down into it to see whether it was occupied or not, and having gone on in this way for some time without result, the natives began to get careless and went ahead of us. Presently we heard some growls and saw our Aryan brethren scuttling up trees. L. and I ran forward and found a large crevice in the rocky ground about four feet wide, eight or ten yards long, and from fifteen to eighteen feet deep; at either end of this caves seemed to run into the ground, and in the centre was a ragged archway that formed a staircase for the bears to climb in and out. Standing astride of the crevice I saw a bear's head appear at the entrance of one of the caves, and as L. was new to the work, I signalled to him to come and shoot, while I stood a foot or two back from the edge, ready for whatever might turn up. The bear, noticing L., turned, and, on receiving a bullet in his seat of honour, ran along the

bottom of the crevice to the opposite cave, acknowledging the second barrel with that peculiarly plaintive moan which a bear so often gives when he has received his death wound. L. then jumped aside, saying, 'Look out'; a second bear's head and shoulders appeared just above the crevice. I fired into her ear at about a yard's distance, and she rolled back to the bottom dead. Tying the ponies' leading ropes together I climbed down, put a noose round the bear's neck, and steadied her while the others hauled her out.

I now told L. that I was perfectly certain that his bear was dead too, and that I would go down and see. I did not fancy going down the archway, as that seemed to be the bears' regular run, so looked about for another entrance, and soon found one which seemed to lead almost perpendicularly down into the back of the cave. After removing a stone or two at the top in the vain hope of being able to see without actually going down, I started on my journey. As it was pitch dark and I had to use both hands in climbing down, I left my rifle behind, intending to run and not fight if I got into a scrape.

On reaching the bottom, I found myself on an underground continuation of the crevice. On one side was a stone about a couple of feet high on which I stood, and as my eyes got accustomed to the darkness, I made out an overhanging rock just in front of me, and protruding from beneath it, at my feet, a mass of hair.

I did not like to put my hand on it, so climbed up again, borrowed a stick from one of the natives, then jogged down again, and jammed the end of the stick into the bear. To my horror he jumped up with a growl, but luckily, being just as frightened as I was, he bolted further up the cave, while I legged it up my hole at about the best pace on record.

I then sent back to camp for a lantern, and with it in my hand and my short single rifle slung across my back, journeyed down for the third time, after posting L. at the top of the crevice, warning him to let any bear that might turn up come well out into the open before he fired, and on no account to let a wounded one come back into the cave on me.

Arrived at the bottom, I placed the lantern on the ground, unslung the rifle, and stepped on to the stones. There, just sticking out from under the overhanging rock, was undoubtedly the back of a bear, so I let drive into it. The smoke completely concealed everything, then there was a prolonged growl, afterwards a succes-

sion of short grunts, my lantern was put out and sent flying by a bear who charged it, brushing past me, probably with the idea that the lantern was the assailant. I scuttled up the hole, and L., who, in the excitement of the moment had forgotten my warning, fired at the bear and rolled him back down into the crevice before I got out.

It was now evening, and getting very dark, so I lit a bunch of grass, and, on throwing it down the crevice, could see a bear lying at the bottom. I threw a stone down, at which he did not growl, but, probably owing to the flickering light of the burning grass, he seemed to move, so we agreed to leave him till next morning. As we were starting home, my shikari noticed that the dry leaves at the bottom of the crevice were burning, which meant that by the morning the bear would have his coat singed off, so I hardened my heart, and, taking the rope, climbed down again, gave the bear a kick when I got just above him, and as he did not move, went up to him, felt for his head, slipped a noose over it, and the men above hauled him out. We started early next day, taking L.'s lantern, as mine was in the cave, and, on arrival at the place, to my infinite disgust, found fresh droppings at the entrance. They were probably only those of cubs, but one could not tell their size, and it made the idea of going down in cold blood much less pleasant.

I fired a shot down the cave, listened, but could hear no sound, so went to my old entrance and tried to lower L.'s lantern by a string, which was cut against the rocks, so that the lantern fell to the bottom.

We were now in a fix, for both our lanterns were down below, and if we left them there we should have to spend our evenings in darkness.

L., whose figure was not suited to climbing about in narrow caves, did not like the idea of my going down again—no more did I—but I could not well leave the lanterns there simply because I was afraid of fetching them ; so taking my double-barrelled rifle with me, I started on my fifth journey. The length of the rifle made the climbing very awkward ; however, I reached the bottom without damaging it, found my own lantern none the worse except for a few dents and scratches, followed the bottom of the cave until I reached the crevice, above which the others were standing anxiously awaiting my reappearance. They lowered a rope and hauled up the lantern, while I went back, found L.'s lantern in two pieces, handed it up, and then proceeded in my search for the bear.

I found him stone-dead under the overhanging ledge, but I could hear something moving ahead of me the whole time; the cave was pitch dark, was getting much lower and narrower, and turned two sharp corners.

To get at the bear's head I should have to crawl over him, and we had no rope long enough to reach to where I was, besides which the cave made so many zigzags that it would in any case have been impossible to haul the bear out without several of the party coming down to assist; so pulling out some hair to show that I had handled him, I returned, and offered to go on ahead of the bear as a guard, with rifle and lantern, if some of the others would bring the rope and do the hauling.

The noise ahead was probably made by cubs, but as I did not know their size, and as it might have been a fourth bear, I did not care to risk being attacked while I was tying up the quarry in a place where I had no elbow-room.

L., I think wisely, decided that we had been very lucky in recovering two bears and our lanterns without accident, and that it would be folly to risk an almost certain mauling for the sake of a third; so I came out, by no means unwillingly. I never fancied the last part of the job—I could not have got the bear out alone, and as two or three men on hands and knees in a narrow cave must get in each other's way in a scrimmage, a charge would probably have ended badly.

I only escaped the first time through putting the lantern on one side of me instead of at my feet, and through the cave at that place being wide enough for the bear to pass by my side; very likely also the fact of my standing on the stone, though it was at the most two feet high, brought me a little above the level of the bear's eyes, and seeing the lantern he charged it.

The astonishing part of the whole thing was the rapidity with which the bears came up the crevice. It was by no means an easy climb for a man, and yet it hardly seemed to delay them at all.

There is a certain delicacy in this branch of sport that requires such exceptional temperament and nerve that the writer can hardly feel himself justified in recommending its practice, at all events to a novice in the art.

The remaining varieties of the bear family found in India are somewhat more rare than those already described. They are the Burmese bear (*Ursus malayanus*), the Beluchistan bear

(*Ursus gedrosianus*), called by the natives 'mamh,' and a quaint looking piebald bear (*Ailuropus melanoleucos*), discovered in Eastern Thibet by the Abbé David. *U. malayanus* resembles the Himalayan black bear but is smaller, the white horse-shoe mark upon the chest of the Himalayan bear being prolonged in a white stripe down the belly of *U. malayanus*. *U. gedrosianus* also resembles, but is smaller than, the Himalayan, but in colour he is brownish instead of black.

Measurements

Authority	Height at Shoulder	Length nose to tail	Girth	Forearm	Sex
	URSUS ISABELLINUS				
	ins.	ins.	ins.	ins.	
Major FitzHerbert . .	36	65	48	17	Male
,,	..	57	..	..	Female
Major Ward . . .	..	82	..	..	..
	URSUS TORQUATUS				
Major Ward . . .	..	78	..	..	..
Col. Howard . . .	..	76½	..	..	..

Authority	Height at shoulder	Length nose to tail	Weight
	URSUS LABIATUS		
	ins.	ins.	lbs.
Sanderson	36	about 72	280
Sterndale	about 36	60 to 72	210 to 280
Major FitzHerbert . . .	..	65	..
	URSUS MALAYANUS		
Sterndale	..	not exceeding 54	..
	AILUROPUS MELANOLEUCOS		
Sterndale	about 26	about 58	..

III. THE LION (*Felis leo*)

Native names: 'Sher-babbar,' 'Singh,' 'Unthia Bagh'

The Indian lion differs little in appearance from the African variety, the males of both being furnished with manes, though a *black* mane is unknown in India.

Lions are almost extinct in India, though there are still a few left in Guzerat and Kutch, and natives occasionally bring in

reports of them in Central India ; but the writer has not heard of one being shot in the last district for many years. The lion is a less active animal than the tiger, and apparently not so powerful ; in every case of a fight between the two occurring in a menagerie the tiger has invariably killed his opponent.

Essentially a wanderer, the Indian lion avoids heavy forest as a rule, preferring sandy hills covered with thin scrub and grass, and may be tracked and shot on foot in a way that it would be foolhardiness to attempt with a tiger. There is a capital account of the sport given in the 'Oriental Sporting Magazine,' July 1876. The narrator came across four males, shot one that charged him brilliantly, wounded and lost a second, and missed a third.

Native shikaris declare that lions always put up for the day under the same bushes, and that consequently if there is a lion about he is generally easily found. It would be curious if African sportsmen could corroborate this story.

Unlike tigers, there is a large preponderance of males to females among full-grown lions, which is supposed to be attributable to the mortality among female cubs in teething.

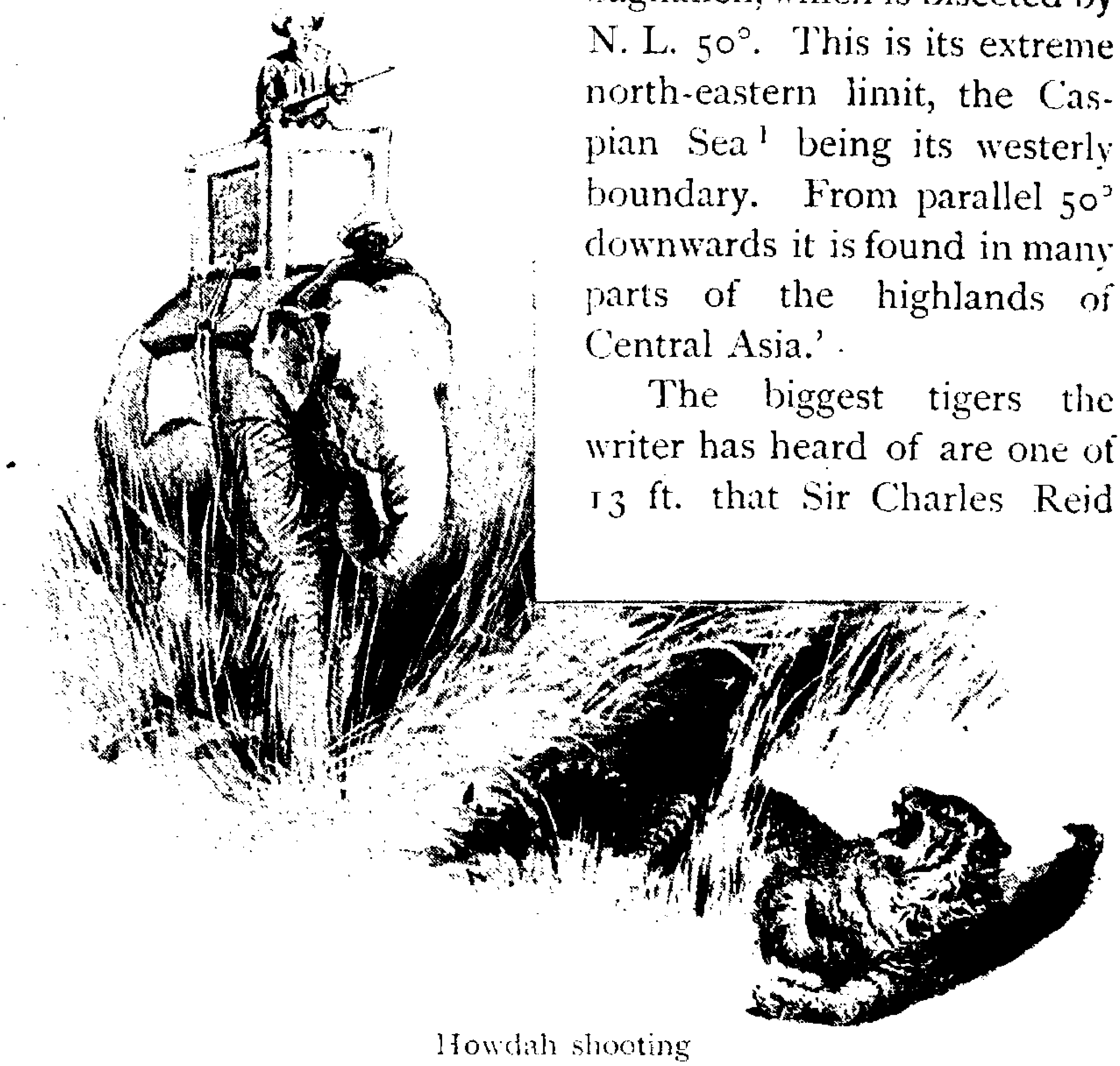
Measurements

Authority	Total length	Tail	Height at shoulder	Girth of chest	Weight	Remarks
	ft. ins.	ins.	ins.	ins.	lbs.	
Sterndale . . .	8 6 to 9 6	30 to 36	42	..	..	
,, quoting Captain Smee . .	8 9½	..	..	..	490[1] (cleaned)	
'The Delhi Gazette': a lion killed in Central India	8 7	34	39	46	..	
'Oriental Sporting Magazine,' July 1876 .	9 3	..	..	..	..	
		African Lion				
Rowland Ward, 'Horn Measurements'. .	..	..	..	..	500	F. C. Selous, 'A Hunter's Wanderings'
,, ,,	..	..	..	..	563	'The Field,' July 13, 1890
,, ,,	..	..	..	..	385	J. S. Jameson

[1] A tiger of this length would only weigh about 300 lbs. not cleaned.

IV. TIGER (*Felis tigris*)

The tiger is found throughout India wherever there is suitable jungle, and extends through Burmah to the Malayan Archipelago and China, but is not found in Ceylon. Sterndale says: 'It has been found as far north as the island of Saghalien, which is bisected by N. L. 50°. This is its extreme north-eastern limit, the Caspian Sea[1] being its westerly boundary. From parallel 50° downwards it is found in many parts of the highlands of Central Asia.'



Howdah shooting

The biggest tigers the writer has heard of are one of 13 ft. that Sir Charles Reid quotes as having been shot by the late Sir Andrew Waugh,[2] and one of 12 ft. 4 ins. quoted in a letter by Mr. F. A. Shillingford to 'The Asian' as having been shot by Mr. C. A. Shillingford of Munshye in 1849; and Williamson, writing about the year 1805 of a tiger killed by Mr. Paul, the superintendent of the

[1] Tigers have been shot in the Caucasus west of the Caspian.

[2] Note to Appendix C, Sterndale's *Mammalia*.

Elephant Establishment at Daudpore, says: 'The tiger proved to be the largest ever killed on the Cossim Bazar island. The circumference of the joint at his wrist was 26 ins.; he was 13 ft. and a few inches from the tip of his nose to the end of his tail, and in a right line, taken as he lay, from the sole of his forepaw to the tip of his withers, between the shoulders, gave very nearly 4 ft. for his height.' As the old gentleman afterwards states that 'nine in ten do not measure 10 ft.,' it seems only fair to conclude that the above extraordinary measurements were honestly taken of the beast as he lay before being skinned.

Captain Forsyth's division of tigers into three classes has been generally accepted by sportsmen as a correct definition of their habits. They are, as Sanderson writes: 'Those which habitually prey upon cattle; those which live upon game alone; and the few dreaded individuals of their race that frequently prey upon human beings.' None of these classes absolutely restrict themselves to one diet. The cattle-lifter will kill game occasionally, the game-killer does not despise a juicy young buffalo, nor does a man-eater live entirely on human flesh; but in broad terms the game-killer, who is in reality one of the villagers' best friends in that he preys upon the wild pigs and deer that ravage his crops, is an active wandering beast which is proportionately hard to bring to bag, being generally met with by chance.

The cattle-lifter is generally a stay-at-home old gentleman, averse to travel, who takes two or three villages under his protection, and lives, as far as they will allow him, on good terms with the people, simply taking a cow, or a donkey, as his *droit du seigneur* every four or five days. Occasionally he may contract the wasteful habit of knocking over two or three animals at a time out of a herd; but this, as Sanderson points out, is the result of continual ill-judged interference on the part of the cowherds. Buffaloes in a herd he is too wary to meddle with, as he knows they will not hesitate to charge him, and the small boys who pretend to look after them traverse

the tiger's domain in perfect safety if mounted on the broad back of one of their charges. In reality the buffaloes are sent out to look after the children, and there is no better nursemaid than an old cow buffalo, who combines perambulator and guardian in one.

Seldom do these tigers attack a man wantonly, and though when they increase in numbers their system of taxation becomes oppressive, the damage they do is often overrated. Forsyth gives the alarming figures of 325*l.* to 650*l.* worth per annum for each tiger, but Sanderson more justly cuts the estimate down to about 70*l.* He adds, 'The tiger might in turn justly present his little account for services rendered in keeping down wild animals which destroy crops,' and gives many excellent arguments in favour of tigers.

The gravest charge against cattle-lifters is that they occasionally turn man-eaters; the game-killer, according to Sanderson, never does. As regards man-eaters, the crafty she-devils—they are generally tigresses—often bring up their cubs to the same way of living. They roam over a considerable tract of country, rarely staying long enough in one place to afford a chance of beating them out like ordinary tigers, killing perhaps on successive days at villages ten miles apart, rendering the whole district helpless from terror. These are the hardest brutes of all to destroy. The sportsman can get no help from the natives, he can gain no knowledge of the brute's conduct to assist him in the pursuit; ceaseless hunting at all hours and in every method available, hoping that luck may favour him at last, is his only chance of ridding the country of its scourge. Even if he succeeds in killing every tiger he finds in the district, he can never be sure of having destroyed the real culprit; he may have driven it away only to return after his departure. There may be more than one man-eater at work, or it may very possibly be a panther that is doing the real damage, which he might refrain from firing at, like Sterndale, for fear of spoiling his chance of a tiger. Unless the beast is caught red-handed, time alone will prove its destruction.

Well may the unhappy villagers attribute to it supernatural powers, declaring that the spirits of its victims ride on its forehead, and that even, as Forsyth relates, a corpse raises its arm to warn the tiger of the hidden shikari. Well may they magnify its size, declaring it has a white moon on its forehead, and its belly sweeps the ground. Till all killing has ceased for some months no man dare pursue his usual avocation or travel to the nearest village alone.

Tiger shooting may be broadly divided into three classes, viz. : shooting from elephants ; driving with beaters to guns posted in trees ; sitting up over kills. The first method is that usually employed in the high grass jungles of the Terai. The ordinary plan, if a tiger is marked down into a particular patch of grass, is to send one or two guns ahead to prevent the creature slinking out, and these guns should, if possible, be posted in trees, as the restless movements of the elephants will almost invariably head the tiger back, and the elephant is better employed with the line. Of course, if it is considered desirable to hem the tiger in till the line gets up, elephants should be posted ahead, but a man in a tree will as a rule get a better chance than if he were on an elephant. The forward guns being posted, the line beats up to them with guns on the flanks and the pad elephants in the centre ; if there are more than two guns with the line, the remainder distribute themselves along it. The elephants should not, if possible, be more than twelve yards apart at starting, and if a tiger is wounded should be closed up till they almost touch one another, as the elephants and their mahouts will gain confidence, and the formidable aspect of the close line will prevent most tigers from attempting to charge home ; short half-hearted attacks he may make, but the line will stand firm, for the mahouts are under too close supervision and have hardly room to turn their elephants round ; the guns on the flanks are also close enough to protect the whole line.

To hear of tigers making good their charges and springing on to elephants' heads sounds very nice and exciting, but

nothing is more demoralising to the elephants, especially at the beginning of a trip, and every precaution should be taken to save your elephants from getting mauled ; for, if injured, many of them never recover confidence, and become absolutely worthless for tiger shooting afterwards. Forsyth mentions an instance of an elephant dying of wounds received from a tiger. It is all very fine for the sportsman to take a charge, standing in a howdah perched on the back of a large tusker ; but it is a very different thing for the opium-sodden nerves of an unarmed mahout riding a small timid pad elephant. Close order is the only safe formation for pad elephants, and should invariably be adopted. If the tiger is marked into a particular bush, the line may be halted, and the howdah elephants alone be taken up to engage him ; but until the mahouts have thorough confidence in the guns a fight is better avoided.

It is a good plan to reward all the mahouts engaged after a successful hunt, and the douceur should be bestowed on the spot, or at latest the same evening on return to camp ; any mahout misconducting himself of course forfeits the reward. A wounded tiger rarely goes far before lying up, and there is really less chance of a close line missing him than an extended one, as with the latter he may crouch and be passed over.

Ringing tigers with a large number of elephants, as practised in the Nepal Terai, is merely a variation of the ordinary method, and is thus described by Sir E. Durand :

The usual method is to send men ahead the day before, to tie up buffaloes in all the likely places round the place selected for camp, then beat up the jungle with a long line of three or four hundred elephants. If a kill is found, the flanks of the line gradually get forward and wheel inwards, and on a tiger being seen the flanks sweep round as rapidly as possible and form a ring round the patch of jungle the tiger is supposed to be in. If the tiger breaks out, fast elephants are sent in pursuit at once to head him and try to detain him till a fresh ring can be formed. On one occasion, when a kill had been found, both flanks of the line of elephants had gradually been creeping forward till they were almost at right

angles to the centre, which still kept steadily advancing. Suddenly, although apparently no news had been passed up, a sort of electric current seemed to run through the line ; then bugles sounded right and left, and the movement became hurried. The Maharajah (Bir Shumshir of Nepal) and I then stopped to mount our howdah elephants (as we had hitherto been riding pads), and, advancing on them, found ourselves outside a ready-formed ring of elephants, some two hundred yards in diameter, encircling a lovely glade in the forest, damp and cool, with tall green reeds and scattered trees. A tiger had been viewed, and the question now was, whether he was inside the ring or not. Orders were now given for the ring to close very slowly and steadily, till it had contracted to a circle of about a hundred yards, and the elephants were in some places standing two deep. A halt was now made to complete the formation ; gaps had to be filled up here and there, and big tuskers sent round to any weak points where a number of small elephants had got together, to give them confidence in case of a charge. The Maharajah and I then entered the ring, and took up a position on our howdah elephants, between where we thought the tiger was lying hid and the heaviest cover. I have seen several tigers break the ring and escape for the time when this precaution has not been observed. Three big tuskers, which had accompanied us to rouse the tiger, then began moving about very quietly, lifting up a tangle of grass here, shaking a bush there ; for tigers in these rings lie very close, the elephants invariably making a masterly retreat immediately pending the result of each special inquiry. Suddenly, not fifty paces from us, a lovely tigress with a glitter of gold on her flanks appeared, standing listening and motionless. As we had detected no movement she must have been crouching in the short grass and risen to her feet. We usually took it in turn to fire first, and as it was the Maharajah's shot, and our elephants were standing side by side, I leant over my howdah and touched his arm. He fired hurriedly, and with a whoop of anger the lady answered the shot and sprang into a thick bed of high reeds. Thinking she was hit, we went round and posted ourselves again between the reeds and the line of elephants on the far side. We had hardly settled ourselves when there was a deliberate rush, beginning some thirty yards from us, and the charge came straight and true. When within three yards of the tusks of the Maharajah's elephant she met her fate, and rolled over and over like a rabbit, almost between the lowered tusks of the elephant, with a bullet

through the head, and never moved again. The Maharajah's elephant, usually impassive and unhysterical, had actually been so far shaken by the decided nature of the charge that he had moved and forced his rider to sit down just at the critical moment. The noise of the charge and the shot roused up her mate, a heavy, long tiger, who gave me a chance as he walked quietly between two patches of cover about sixty yards off, and I dropped him with an Express bullet through the shoulder. Now began a performance that I never like, and for which the only excuse is the fear—a very real one—that if the howdah elephants get mauled they no longer remain absolutely staunch and reliable. The game is, that when a tiger is wounded in thick cover, the big tuskers are sent in to move him. It is often a very funny sight as the tiger goes for them and they find pressing business on the other side of the ring, whilst the careful way they hunt for him or break down a tree to fall near him and stir him, and then clear out, is quite a study. The mischief is that they are often caught, and on this occasion three of them were caught by the tiger, one after the other. The tiger once was swinging under a big tusker's head and getting his hind leg up; for a moment we thought he would pull the elephant down, but the latter managed to shake him off. The Maharajah and I then went in and killed the tiger before he had time to get in a fair charge at us.

On some occasions we have had as many as three, four, or even five tigers in one ring, and the excitement is of course proportionate. Then, though a purist would object that the whole thing is not real sport, it is most interesting from beginning to end: the careful search for the tiger, always an excitement in itself, the ringing, the doubt whether you have him inside or not, his break, perhaps, before or after the ring is formed, and the mad rush of shouting mahouts and crashing elephants to head him and surround him again; the lesser life that goes whirling up overhead when the tuskers search the ground—peacock, jungle-fowl, partridge—or the blundering gallop round the ring of a frightened boar, the rush of terrified hog-deer or chital; and perhaps, at last, a circus performance on the part of the tiger himself, who will gallop round the ring, his tail whirling like that of an angry cat, trying the circle here and there with a hoarse, grunting charge, which is met by a volley of abuse and cudgels flung by the mahouts, and by shrill trumpetings on the part of the elephants, backing with fright. All this tends to make a Nepalese tiger ring an interesting and an

exciting show, even before the tiger charges the howdah elephants, which he seems to recognise at once as the real enemies he has to fear.

The second way of hunting tigers by beating them out is that generally practised in Central India, Bombay, and Madras; here, though a few elephants may be employed as they are in Central India, their chief use is for following up wounded animals, and not for obtaining the first shots. The circumstances of tiger hunting in these two districts are entirely different.

Instead of the seas of high grass in which tigers are found in the Terai, the usual beats in Central and Southern India are densely wooded ravines, often with precipitous banks. The modes of hunting vary slightly in different districts, but the method perfected by the Central India Horse parties is the one generally adopted. It is as follows: a line of country for the party is decided upon, and the camp is preceded by three or four pairs of shikaris, who practically form a line of scouts ten or twelve miles ahead of the camp. These men visit all the known tiger nullahs, and on obtaining information from the villagers tie up young male buffaloes (the cheapest animals that can be bought, as they are of little use except to train as pack animals, and even then are not as good as bullocks for the purpose) as baits in all the likely spots within reach of the village; the baits are visited next morning, and reports of kills sent in to head-quarters. The head of the party, after receiving the reports from all the country round, is then able to decide on his plan of operations, selects one or more beats for the day's work, and orders the remainder of the shikaris to keep on tying up. The shikaris of the beat selected assemble the beaters, sixty or a hundred men being engaged according to the ground. Operations begin about noon, when the tigers are pretty sure to be lying up. The guns, usually four in number, as there is rarely room for more, draw lots for their trees (this is generally done for each beat), and take up their positions as quietly as possible. Each gun is

accompanied by his gun-carrier, and is provided with a leather bottle of water and a stout leather cushion two feet square, with eyelet-holes at the corners and ropes to sling it.

The cushion is lashed up in the tree so that the sportsman's left shoulder is towards the beat; loops of rope are arranged as stirrups to prevent an attack of pins and needles in his legs, and another loop should be passed loosely round his body and fastened to the trunk or to a strong bough, so that he can lean well over without fear of falling; the small boughs that would interfere with his shooting are cut away as noiselessly as possible with a green-wood saw. The gun-carrier is sent to another tree, about a hundred yards in rear: the sportsman takes a good pull at his water-bottle and sits, slowly frying in the sun, till the beat strikes up. He will now appreciate the precautions he has taken of wearing a good big hat, a thick cummerbund round his waist, and a cotton quilt down his back. In the meantime men have been posted as stops along the flanks of the beat and in places where the tiger may break out; these are of course either up trees or on high rocks, and their orders are merely to clap their hands if the tiger tries to break out. The slightest noise ahead will suffice to turn a tiger. As a rule the guns are not allowed to smoke, and this, not so much from fear lest he should wind the tobacco, as because, if he hears a match struck, he will perhaps crouch till the beaters come up to him, and then dash back through them. The beaters form line under the direction of all the available shikaris (the four or five elephants that may be out being distributed along the line), and advance towards the guns making all the noise they can with tomtoms, horns, rattles and their own sweet voices. If matters go smoothly the tiger will walk with long swinging strides close past one of the guns, and be either dropped on the spot, the point of the shoulder being the place to aim at, or will dash on with a loud 'wough' towards the gun-carrier in rear, who should be able to mark him down. He may, however, particularly if he has been driven before, creep on just ahead of the beaters, hide

before he reaches the guns till the last moment, and then come out at a gallop. If he has to cross an open glade, he will almost invariably bound across, pulling up to a walk in the cover of the far side.

Probably the first things that the sportsman will see will be a herd of chital trooping quietly past his tree, or he will hear an irresolute tread among the dry leaves coming closer and closer, till the head of a peacock peers round a bush, instantly detects him—for no man ever yet hid from a peacock—and the bird scurries off with a sqawk. A bear may come shambling by, or a panther walk right under his tree, but the first shot must be reserved for the tiger; when that is fired anyone may take his choice. The sure signs of either a tiger or panther being in the beat are when the monkeys begin swearing or peafowl get up with a peculiar 'kok-kok.' Monkeys running along the ground is a bad sign for sport, but not an absolute guide.

As soon as the first shot is fired the beaters are stopped, and either sent up trees or collected in masses on rocks or high ground. The elephants come up to the guns, and the head of the party details one or two guns to get round the wounded tiger and force him back up to the other guns, who remain in their trees—this is when the fun begins. The tiger's every move will be probably observed by some of the men in the trees; he can hardly get away, and has every inducement to show fight.

If a tiger is killing near camp, there is a good deal of sport to be had by going round the baits in the morning oneself. If one of them is taken, a wide circuit should be made round the cover with a good tracker to ensure the tiger being at home. An inner circuit may be then made to determine his approximate position, and to do this well without disturbing him requires great care and skill; but the knowledge so gained is invaluable in beating for him afterwards.

In Bombay and Madras elephants are not generally used, and, instead of the square cushions to sit on, light bamboo ladders are carried and set up against trees or clumps of

bamboo where cushions could not be slung, the top of the ladder being lashed to the tree or bush, and the sportsman seating himself on one of the rungs. Many sportsmen praise these highly, as being easier to erect and giving more choice of position; but, on the other hand, they entail an extra man to accompany the sportsman to his tree, and are more conspicuous. Accidents of course happen equally to both: men have been taken out of their cushions, and ladders have been upset. The district in which the sportsman has received his training usually decides his choice of gear. The want of elephants, however, in Bombay and Madras obliges the guns to follow up their wounded tigers on foot. The orthodox procedure is to form a picked force of beaters and shikaris into a solid triangle, the apex and flanks being formed by the guns. Every man should provide himself before starting with all the stones he can carry; the wounded tiger is generally given a considerable time to stiffen—two hours if they can be spared may well be spent thus. The trail is then followed at a slow pace, every bush being well stoned before it is approached, far more passed; at every tree the party is halted and a man sent up to look, and if a tracker is necessary, he moves close under the guns of the two sportsmen who form the apex. If the natives can only be persuaded to keep together, with cool guns and fairly open ground like the bamboo jungles of Southern India, there is no excessive danger; but the writer's experience of the work was that for the first hundred yards the men kept together pretty well, but would go too fast; then they became careless, and as the danger really increased began to straggle. Being single-handed, though there was another party working parallel to him at about fifty yards distance, the writer was unable to keep his men in order, and by the time the tiger was found, luckily dead, by the other party, his followers were all over the place.

The subjoined account by Captain Lamb gives a good idea of what may be expected to take place without trained men:

As soon as the beaters came up we [Major Mansel and himself] had awful trouble to prevent them scattering about in the jungle. We waited about twenty minutes, and then started to follow the tiger up. We took twenty men and formed them four deep, close up and shoulder to shoulder, M. and I going in front. We impressed upon the men that they were on no account to leave the square, and sent two men on each flank up trees to examine the ground in front. We could easily track the tiger by his blood, and in one place found what looked like a piece of his liver. We knew he could not go far, especially as he was full of cow. Some of the men began to wander a little, and we had to abuse them to make them keep their places. The trail led us through dry grass up to our knees, but not very thick, and growing under scattered young trees. After going about two hundred yards we heard the tiger growling, but he must have moved on. We could still follow him by his blood. Another hundred yards, and we could hear him distinctly. The square began to break, and several men started shinning up trees. M. shouted 'Look out,' and the words were not out of his mouth when the tiger came, his tail up, his mane on end, at a gallop, roaring and making straight for us. He was about twenty yards off when he first came out, and looked an awful devil, being almost black from rolling in the ashes where the jungle had been burnt. M. fired at him when he was about ten yards off, and he swerved a little to his right, passing M. within five yards. I was on M.'s right and could not fire before, but as the tiger passed I turned and fired behind M.'s back; there was a cloud of dust, and at first we only heard a thud, and could not see whether the tiger had gone on or not; as the dust cleared, we saw him lying stone-dead. It was a very lucky shot through the neck, as by this time the square was in full retreat, the men scattering all about and falling over each other. The front rank and part of the second alone stood firm, so if the tiger had gone on he would certainly have mauled one or two of the natives. He measured 9 ft. 9 ins. as he lay.

The worst part of getting a native hurt is, that though it almost invariably happens through his own wilful disobedience of orders, the news spreads like wildfire through the district, and makes it very hard for the party to procure beaters. Rustum Ali, the villagers argue, was a brave man; he didn't fear tigers, we have seen him throw stones at tigers, and he went

out with those sahibs and got killed—the said Rustum having met with his death by getting out of his tree and going to get a drink of water while the guns were following up a wounded tiger, or some equally nonsensical breach of orders. Accidents of course do happen, even when all precautions are observed, but the majority of them are occasioned by the natives' own carelessness.

Natives are often very unwilling to give information about tigers, partly from fear of being turned out to beat, and partly from the universal idea that the tiger, if he escapes, or his mate, if he is killed, will take vengeance on them. They often also consider it unlucky to mention his name, and talk of him as a jackal, precisely as in Sweden a bear is never talked of as such.

Sitting up for a tiger over a kill or bait is the least amusing and least certain of any method of hunting him, but often in large forests which cannot be beaten, or where the sportsman is single-handed and without elephants, it is the only way to get a shot.

The erection of the platform, or 'machan,' too frequently disturbs the tiger and drives him away. If the sportsman can procure baits, a good plan is to select a good place for a machan before tying up; tether lightly so that the tiger may drag the carcase away. Make the machan when the first bait is taken, tie up again till he kills again in the same place, and about three days after the second kill tie up again and sit over it. The best machan is a cot with low rails round the edge, fitted with ropes to sling it in a tree. The sportsman's blankets and pillows can be spread in it, he himself can lie comfortably at full length watching the bait or kill, there are no sticks to crackle and make a noise; and when the moon goes down or he has had his shot, he can turn round and sleep as one only sleeps in the open. The sportsman should be at his post by four o'clock in the afternoon, as if the tiger means coming he will probably come early. Sanderson says he enjoys the sport; it's pleasant enough if the tiger comes soon, but if he puts off

'THE FRONT RANK AND PART OF THE SECOND ALONE STOOD FIRM'

his visit to 3 A.M., as happened to the writer, who was at that hour peacefully sleeping and never woke up, the entertainment is mediocre. Allowing a native to perch on the same tree is ruination to sport: cough he must; besides, the jungle man is unsavoury, and the evening air seems to make him smell worse than usual. If a kill is found in the jungle and the sportsman decides to sit over it, General Macintyre's plan is worth trying; i.e. take some men up to the tree, let them talk loudly, or shout while the machan is being prepared, and then retire talking or shouting, according as the tiger is supposed to be bold or timid. He will very likely come at once, as their voices die away, not to eat, but to see if they have removed the kill. This often succeeds where professional skinners are in the habit of saving what they can of the hides of kills. Lieutenant-Colonel Fife Cookson, in his book 'Tiger Shooting in the Doon and Ulwar,' gives a curious account of a tiger stalking a bait:

Suddenly there emerged from underneath the trees a brownish-yellow object which appeared about the size of a monkey, and for a moment, in the failing light, I thought it was one. It darted rapidly along the bare ground for about twenty yards at a time, moving towards the bullock, and stopping at the end of each run behind one of the tufts of grass about two feet high, over which it peeped, then sinking down again and gliding forward as before. It was now nearer, and by this time I could see that it was not one of the monkeys; but still I could not clearly make out what it was. It reminded me of a very ugly, large, yellow and black mask at a pantomime. I could see no legs or body. Now it reached a tuft about forty yards from me, over which it also peeped, staring intently at the bullock. By this time I was convinced that it was the tiger, though it looked about the size and shape of a horse's head. The curious appearance which the tiger had presented at a distance of about seventy yards, in shape like the head of a horse with the chin touching the ground, was no doubt owing to my seeing his forepaws underneath and part of his back foreshortened over the top of his head. What most particularly struck me was the small object which the tiger appeared during the stalk. It must be remembered that, although I perhaps saw a little of the

back between his ears, I was looking down upon him from a much higher level, and that if I had been on the ground I should probably have seen nothing but his head. Thus the tiger was evidently able to hide himself behind any tuft of grass which was large enough to conceal his head. Another remarkable thing was the position in which he held his head. It was no longer in the usual attitude, with the nose in the air, as when the animal is walking about; but the face was held vertically, the chin being drawn in, and the forehead pressed forward, thus displaying its black stripes and markings, together with the intent stare of the large eyes. This greatly added to its sinister appearance.

Williamson describes another variety of sitting up, the sportsman being enclosed in a strong bamboo cage and playing the part of bait himself, being armed with two or three spears:

Being accompanied by a dog, which gives the alarm, or by a goat, which by its agitation answers the same purpose, the adventurer wraps himself up in his quilt, and very composedly goes to sleep in full confidence of his safety. When the tiger comes, and perhaps after smelling all round begins to rear against the cage, the man stabs him with one of the spears, through the interstices of the wickerwork, and rarely fails at destroying the tiger.

The writer heard of an instance of this being tried by a European, with a cage made of iron. Unfortunately the bars were set too far apart, and the tiger got his paw through and slew that adventurer.

Williamson also narrates the old story—possibly it was taken from his book—of tigers being caught by covering leaves with birdlime; it was told him by a Mahommedan gentleman of the Court of the Nabob Vizier of Oude. Sanderson gives a capital account of tiger-netting, as practised in Mysore, and describes the various traps occasionally used by natives. The late Maharajah of Patiala, about 1872, had a tiger that had been trapped in the hills turned out on the plain outside the town, he and his guests being mounted on elephants. Of course the whole of the populace assembled to see the fun, forming a large circle round the plain. The tiger, on being released

where there was not sufficient cover for a quail, selected as his point of exit the buggy of a native gentleman, who sought refuge between the wheels; his groom, being unfortunately in the way as the tiger cleared the conveyance, was knocked over, but luckily more frightened than hurt. The tiger then took refuge in a garden, pursued by the elephants. On their arrival at the spot the gardener was found placidly pursuing his avocation, and, on being asked if he had seen the beast, imprudently pointed him out. The tiger at once sprang on the man, upset him and bolted; but as he was now heading for the English doctor's stables he was considered to be becoming dangerous, and was cleverly shot by the Maharajah.

Sanderson, in describing the way a tiger attacks and kills his prey, says that in attacking a bison his object is to get the latter to charge, and then, avoiding the rush, to follow on the instant and endeavour to emasculate the bull by striking him behind. In killing cattle he writes:

> The general method is for the tiger to slink up under cover of bushes or long grass, ahead of the cattle in the direction they are feeding, and to make a rush at the first cow or bullock that comes within five or six yards. The tiger does not *spring* upon his prey in the manner usually represented. Clutching the bullock's forequarters with his paws, one being generally over the shoulder, he seizes the throat in his jaws from underneath, and turns it upwards and over, sometimes springing to the far side in doing so, to throw the bullock over, and give the wrench which dislocates its neck.

Sir S. Baker writes that while lions and cheetahs (*Felis jubata*) use their paws in striking down their prey at the moment of capture, tigers apparently never do. Sanderson points out that Forsyth, as also Captain Baldwin in his 'Large and Small Game of Bengal,' agree that tigers seize by the back of the neck, and then give the dislocating wrench. The writer noticed the fang-marks on a good many kills in Central India, and certainly they appeared from their position rather low down, apparently too much so to have been inflicted by a bite on the back of the neck—a tiger's jaw is not very

long—to entirely support Sanderson's description. As regards a tiger's powers of springing, Sanderson says he has often measured the bounds of tigers that have pursued deer, and found 15 ft. to be about the distance they usually spring.

The writer particularly noticed the way a tiger sprang at an elephant: he did not bound from a distance at all, but simply galloped up till he was just under the elephant's ear-hole, and then sprang vertically upwards, placing his forepaws on the elephant's head, and there he hung till the elephant shook him off. A tiger can with ease get his forepaws on to an object twelve to fifteen feet from the ground; but he seems clumsy in getting sufficient hold with his hind paws to enable him to proceed after his first spring. Sanderson says that tigresses do not breed at any fixed season. Sterndale states that they go with young for about fifteen weeks, and produce from two to five at a birth. Sanderson gives four as an unusually large number; the writer saw six taken out of a tigress, but probably these would not all have been born alive. He also saw a tigress with four cubs which must have been nearly a year old, one of them which was shot measuring 4 ft. 9 ins. Mr. Shillingford's memorandum quoted by Sterndale is interesting:

Cubs one year old measure	Males	4½ ft.	to	5½ ft.
	Females	4	,,	5 ,,
,, two years ,,	Males	5½	,,	7 ,,
	Females	5	,,	6½ ,,
,, three years ,,	Males	7	,,	8½ ,,
	Females	6½	,,	7½ ,,

When they reach three years of age they lose their 'milk canines,' which are replaced by permanent fangs, and at this period the mother leaves them to cater for themselves, the tigress breeding once in three years.

Mr. Shillingford also notes that out of 53 cubs (18 mothers) 29 were males, and 22 females, the sex of two cubs not being given. This tends to prove that there are an equal number of each sex born,[1] the marked preponderance of adult tigresses ov

[1] Sterndale's *Mammalia*.

tigers being accounted for by most writers by the native story that the male tigers kill the young male cubs. The writer offers another suggestion: may not the young male tigers as soon as they leave their mothers avoid the domains of the heavy old cattle-lifters, and taking to the hills and forest form the game-killing class, till they are powerful enough to succeed to the estates of their sires, either by force or by inheritance, owing to their sire having met with an accident when entertaining a sahib, and so settle down and take wives? The writer has no proof to give in support of this suggestion, but merely offers it for sportsmen to consider. With respect to the common native story that the age of tigers may be told by the number of lobes in their livers, the writer made the following observations in Central India: Tigress, 6 lobes; tiger, 8 lobes; tigress, 7 lobes; cub (male), 6 lobes; male panther, 7 lobes; tigress, 7 lobes; tiger, 8 lobes; tigress, 7 lobes; tigress (a very old light-coloured one), 7 lobes; tiger, 7 lobes.

Sanderson say he has shot tigers and panthers with from 9 to 15 lobes. An article on the age of tigers as shown by their length, written by Mr. F. A. Shillingford for 'The Asian' and copied in 'Land and Water,' August 30, 1890, appears to be worth quoting:

> It was the opinion of the late Mr. Joe Shillingford that in Bengal and the Nepal Terai, at all events, tigers, as distinguished from tigresses, did not attain full maturity until they attained a length of over 10 ft., measured 'sportsman's style,' and that occasionally they attain a length of 11 ft., and that the 12 ft. tiger shot by the late Mr. C. A. Shillingford was an exceptional monster, like the exceptional tigress, 10 ft. 2 ins. in length, shot in 1867, and in these opinions I entirely concur. I have a collection of over a hundred tiger skulls, and in no case are the parietal sutures obliterated from old age of skulls of tigers below 10½ ft. in length.

Tigers take to water readily, and swim higher out of the water than most animals.

Elephants who take matters into their own hands and

charge at tigers are exceedingly dangerous in the field, particularly after a tiger has been killed and men are dismounting to pad it. All the elephants in such a case, except the one destined to carry the beast, should be taken away from near the carcase; they are more or less in an excited state, and are apt to mistake a man in the grass for another tiger. The writer remembers being on an elephant that stood perfectly steady for the shot, but as soon as the tiger was killed—it was within a few feet of her—it was all the mahout could do to prevent her charging it.

The elephant has a way of playing football with an animal which though diverting to a spectator is awkward for the man in the howdah. The elephant performs a kind of war dance over the carcase, kicking it about between his feet, lifting it with the front of the hindfoot and returning it from the back of the forefoot till tired, when he places one ponderous hindfoot upon it and squashes it flat. If an elephant has been mauled, it is not at all a bad plan to let it play with the carcase of its enemy; but everything should be taken out of the howdah, and the skin will not be worth much afterwards.

Two other serious dangers that have to be guarded against in tiger shooting are bees and red ants. Bees generally hang their hives from boughs of trees or on the face of rocks, but often they have them in high grass, and an elephant pushing his way through disturbs them, rendering them exceedingly aggressive, whilst a shot fired near them is quite enough to make them attack. Deaths of men and animals from their stings have often been recorded; they almost always go at the head, and the best way of escaping is to cover the head with a blanket, which should invariably be placed in each howdah. The mahouts always sit on theirs. Oddly enough, if the head is covered the rest of the body, even of unclad natives, usually escapes their attentions. A nest of red ants, though not so dangerous, is quite enough to put anyone to flight, as they bite unmercifully and leave their nippers in. No one would ever think of climbing a tree with a bee's nest in it, but equal c

should be taken that red ants, which are hard to detect, are not in it also ; an inspection of the trunk will usually decide the question, especially if the boughs touch nothing else. In selecting camping grounds particular attention to these points is also necessary ; most servants do not take the trouble to look up into the trees, and will light their fires under a bee's nest till they have been properly stung once ; but their carelessness may result in the loss of ponies' or even men's lives.

Sanderson remarks on the danger of firing at a tiger's head except at very close ranges. The writer saw an instance of this in a tigress hit on the side of the head with an Express bullet ; she dropped in her tracks, lying with her head underneath her for nearly a minute, when she recovered, went back into the jungle, and gave a good deal of trouble afterwards, charging the elephants freely. A shot through the shoulder is far more likely to be effective. A tiger seems rather a soft beast, and nearly always drops on receiving his first wound, though he picks himself up pretty quickly. Subsequent wounds have comparatively little effect on any animal, and another curious thing that the writer has noticed is that wounded animals nearly always lie down on their wounded side.

Tigers do not seem to be very particular as to what they eat. Sterndale records an instance of their eating carrion ; Sanderson gives a story of three tigers killing and eating a fourth, and of their eating bears ; and Colonel Kinloch told the writer of his finding a snow bear killed by a tiger in Chumba, on barasingh ground. Tigers seem to be yearly penetrating deeper into the Himalayas ; probably they follow the ever-increasing herds of cattle that come up from the plains in the summer to graze.

Sterndale gives an ingenious formula for finding the length of a tiger from its skull. For details the reader is referred to his book.

In the following list of measurements only tigers of 1[illegible] or over are mentioned except where weights are given [illegible]ceptionally large tigresses. The system of recording

Measurements

Authority	Total length	Tail	Height at shoulder	Girth of chest	Girth of forearm	Girth of upper arm	Length of skull	Breadth of skull	Weight as shot	Remarks
	ft. ins.	ft. ins.	ins.	ins.	ins.	ins.	ins.	ins.	lbs.	
Gen. Sir C. Reid, K.C.B.	12 2	..	..	..	..	..	..	..	..	Sterndale's 'Mammalia' (skin measured 13 ft. 5 in.)
Lieut.-Col. Boileau, 1861	12 0	..	..	..	..	..	..	..	..	Sterndale
Col. Ramsay . . .	12 0	..	..	..	..	..	..	..	..	"
Hon. R. Drummond, C.S.	11 9	..	..	..	..	..	..	..	..	"
Col. Shakespeare . .	11 8	..	..	..	..	..	..	..	..	"
Gen. Sir C. Reid, K.C.B.	11 6	..	..	..	..	..	..	..	..	"
Sterndale, 'Meade Shell'	11 6	..	..	..	..	..	..	..	..	"
Mr. F. A. Shillingford .	11 5	..	..	..	..	..	..	..	..	Letter to 'The Asian,' 'Land and Water,' Aug. 30, 1890
" " .	11 1	..	..	..	..	..	..	..	..	" "
" " .	11 0	3 6¾	43	..	..	..	15¼	10½	..	Ditto (skull quoted by Sterndale now in Calcutta Museum)
" " .	11 0	..	..	..	..	..	..	..	..	
" " .	11 0	..	..	..	..	..	..	..	..	
" " .	11 0	..	..	..	..	..	..	..	..	"
Sir G. Yule . . .	11 0	..	..	..	..	..	..	..	..	Sterndale's 'Mammalia'
Mr. Shillingford . .	11 0	3 4	43	54	26	..	..	..	..	Shot in Purneah } Quoted by Sterndale to compare bulk of tigers in Bengal and S. India
" . .	10 2	3 1	45	73	34	..	..	..	..	Shot in S. India }
Mr. F. A. Shillingford .	10 10	..	..	..	..	..	..	..	..	Letter to 'The Asian'
" " .	10 10	..	..	..	..	..	..	..	..	"
Mr. Shillingford . .	10 9½	3 6½	43	..	..	..	..	..	..	Sterndale's 'Mammalia'
" . .	10 8½	3 5½	44½	55	..	..	..	..	..	" "
Sir J. Fayrer . . .	10 8	..	..	..	..	..	..	..	..	" "
Mr. F. A. Shillingford .	10 8	..	..	..	..	..	..	..	..	Letter to 'The Asian'
" " .	10 7	..	..	..	..	..	..	..	..	" "
" " .	10 7	..	..	..	..	..	..	..	..	" "
" " .	10 6	..	..	..	..	..	..	..	..	" "
" " .	10 6	..	..	..	..	..	..	..	..	" "
Gen. Sir C. Reid, K.C.B.	10 6	..	..	..	..	..	..	..	..	Sterndale's 'Mammalia'
Col. J. Macdonald .	10 4	..	..	..	..	..	..	..	..	" "
Maharajah of Kuch Behar . . .	10 2½	3 2½	39½	48½	20	26½	..	..	530	Letter to 'The Asian'
" " "	10 2½	..	..	..	..	..	..	..	493	Rowland Ward, 'Horn Measurements'
Mr. F. A. Shillingford .	10 2	..	..	..	..	..	..	..	..	'The Asian,' 'Land and Water.'

d, Bart.	10 2[1]	..	..	..	..	..	..	..	..	Nepal, Jan. 18, 1891
of Kuch . . .	10 1½	3 1	44¼	54	21	29	15¼	..	..	'The Asian'
,, ,, ,,	10 1	3 3½	41	56	19½	26	..	..	..	,, ,,
Forsyth, 'Highlands Central India' . .	10 1	..	..	..	..	..	..	..	..	
,, ,,	10 0	..	..	..	..	..	..	..	..	
Maharajah of Kuch Behar . . .	10 0	3 1	40	52	21	26	..	..	540	'The Asian'
,, ,, ,,	10 0	3 2	40	51	18¾	29	..	..	..	,, ,,
,, ,, ,,	9 10	3 0	41½	47½	18½	26½	..	..	426	,, ,,
,, ,, ,,	9 6	3 1	38	52	19	29	..	..	481	,, ,,
,, ,, ,,	9 5	3 1	38¼	49	18	26	..	..	420	,, ,,
'Deccan Ranger,' 'Oriental Sporting Magazine,' 1876 .	9 10	..	..	..	..	..	..	..	432½	Tiger
,, ,,	9 10	3 1	46	..	..	..	..	..	425	,,
,, ,,	9 6	2 11	..	..	..	..	..	..	370	,,
,, ,,	9 6	3 2	45	..	..	..	..	..	447½	,,
,, ,,	9 2	..	..	..	..	..	..	..	330	,,
,, ,,	9 0	3 0	42	..	..	..	..	..	282	Tigress
,, ,,	8 11	2 9	39	..	..	..	..	..	245	,,
,, ,,	8 8	..	..	..	..	..	..	..	285	Tiger
,, ,,	8 5	..	..	..	..	..	..	..	256	Tigress
,, ,,	8 5	2 9	39	..	..	..	..	..	253	,,
Mr. H. L. Heber Percy	9 10[1]	..	..	..	..	..	..	..	..	,, Nepal, Feb. 12, 1891
,, ,, .	9 2½[1]	..	..	..	..	..	..	..	..	,, ,, Jan. 31, 1891
,, ,, .	9 2[1]	..	..	..	..	..	..	..	..	,, ,, Jan. 21, 1891
The Writer	9 1	..	..	..	..	..	..	..	..	,, Central India, May 23, 1876
Col Gordon Cumming, 'Wild Men and Wild Beasts'	9 1	..	..	..	..	..	..	..	..	,,
	9 0	..	..	..	..	..	..	..	..	,,
Capt. Lamb	9 0	..	..	..	..	..	..	..	..	,, Central India
Sir E. Durand, Bart. .	9 0[1]	..	..	..	..	..	..	..	..	,, Nepal, Jan. 17, 189
Sanderson, 'Thirteen Years among the Wild Beast'	..	..	..	..	..	..	..	..	349½	
Rowland Ward's Collection	..	..	..	..	..	..	14½	10	..	Rowland Ward, 'Horn Measurements'
Average of full-grown tiger . . .	9 6	3 1	42	48	18	26	..	..	420	
Average of full-grown tigress	8 4	2 10	39	..	..	..	..	..	265	

[1] Measured between uprights and not following curves of body

tigers' weights as shot does not appear satisfactory. Those which scaled over 500 lbs. must surely have included a good deal of beef.

V. PANTHER (*Felis Pardus*)

Native names: generally, 'Chita'; in the Himalayas, 'Lagá Bagá'; in Central India, 'Téndwá'

The panther is common all over India, Burmah, and Ceylon, but does not cross the snow-line of the Himalayas, being replaced beyond the range by the ounce. Sterndale gives two varieties, the pard and the panther, describing the pard as being larger, the spots more clearly defined in rosettes, and the skull longer and more pointed than the panther's. Sanderson also gives two varieties with the same distinctions, but calls Sterndale's pard the panther, and Sterndale's panther the leopard.

This is in itself perplexing to the ordinary sportsman, and as the writer saw two beasts shot in the same beat, the male corresponding to Sterndale's pard and the female to Sanderson's leopard, the only solution he can offer of the difficulty is that the sportsman may call the beast he shoots either leopard or panther according to his own fancy, and not one man in a hundred will be able to contradict him.

The panther is a nuisance wherever he is; he is perpetually prowling about villages at night picking up unconsidered trifles, such as dogs, goats, ponies and babies, in short anything. Occasionally panthers become regular man-eaters, and though far more plentiful than tigers, they are so cunning that they are far harder to shoot. A wounded panther is always a dangerous beast to follow up. He can hide, like a quail, in anything; his attack is always sudden, and being a quick, active beast, he more frequently makes good his charge than a tiger. More men get mauled by panthers than by tigers, but on the other hand fatal results are the exception, and stories are told of men having strangled panthers with their hands when they have been attacked.

Many a pet dog has been carried off in broad daylight, in the middle of large hill stations, where the forest comes close up to the roads and houses. A dog of my own had the narrowest escape in Chamba, being chased by a panther almost up to my feet. The beast had almost got hold of him when I drove him off. Ward recommends trapping, and gives capital directions for making a cage-trap. When the writer was stationed at Chakrata a few panthers were caught in these traps, but more were shot over dogs tied up as baits. Panthers are often shot in this way, or by sitting over a kill. At night a very good plan is to strew chaff thickly all round the bait, and if it is dark arrange a lantern so as to throw its light on the bait; neither of these plans will scare a panther, though it might a tiger.[1] Sterndale recommends phosphorescent oil (one grain phosphorus to one drachm oil dissolved in a bath of warm water) for touching the sights at night. There is a magnesium wire lantern, a Hanoverian invention, which is made to fit on the sportsman's shoulder, and on a string being pulled throws a broad search light down the barrels of the rifle lasting about thirty seconds; but this, if the sportsman was sitting on the ground, might lead to complications should the first shot fail to kill outright. If a panther's cave is found, it is often worth while watching the entrance about 4 P.M., when the animal will come out and sun himself before starting on his evening ramble. In Central India panthers are often beaten out like tigers, but they are unsatisfactory beasts to try and drive, as they are so apt to hide and let the beaters pass by them. On one occasion a panther came within shot of one of the guns, who did not fire as a tiger was expected. The panther first amused himself by catching a hare that the beaters had driven up to him, then, as the men got near, he selected a plump youth and proceeded to stalk him, when the gunner thought it time to interfere.

Sitting up over a bait at night is the poorest of all amusements. Often has the writer undergone it, and as often sworn

1. Several good sportsmen even recommend the plan for tigers.

he never would do it again, till the next absolute certainty has been offered him with the usual disappointing result.

When a panther is in the habit of attacking flocks on their way home in the evening, a good plan is to select a place before the flock returns, and arrange with the shepherd that he shall drive the flock past your hiding-place and tether a kid as he passes; the apparent absence of pre-arrangement will probably induce the panther to show at once.

Sanderson gives some stirring accounts of his adventures with panthers in which the following points are particularly noticeable, viz. the necessity of posting markers outside the cover beaten to watch the panther if he leaves it; that panthers will not charge out of caves even if poked up with bamboos; that, unlike most tigers, a panther charged home at a large party of men closed up, and used his paws, cuffing right and left instead of biting. Not that a panther never bites, as the beast referred to had bitten a man previously, but in nearly all cases of men being mauled the bulk of their injuries are claw wounds.

Sterndale relates a curious legend about a well-known man-eating panther that killed over two hundred people in three years, and was supposed to be a kind of Wehr-wolf. Panthers have often been ridden down and speared, but two or three men are required for this amusement, as on the first horse overtaking it the panther will at once crouch and endeavour to spring on the horse's back as he passes. The second horseman should, therefore, be close up ready to cut in at once; care should be taken to get the first spear home in a good place, and the panther should be held down if possible, till despatched by the spears of the rest of the party. It is foolhardiness for a single man to attempt it. Panthers climb readily, and many have been shot out of trees where they have taken refuge, or been found lying asleep on a branch. Forsyth considers that many panthers escape in drives by taking to trees, and mentions finding the body of a child, that had been killed by a panther, lodged in a forked bough.

The troopers of the Central Indian Horse used often to kill

panthers in the rainy season by tracking them into patches of sugar-cane, which they surrounded with men armed with spears and swords (guns were naturally not allowed), and then hunted the beast out with a pack of dogs. When panthers or bears were marked down in jungle too big to be surrounded, the guns were posted in trees, and the pack laid on to hunt the beasts up.

Terriers were chiefly used, but it was necessary to employ a greyhound or two to prevent the beast galloping away from the little dogs; the greyhounds would not tackle, but by ranging up and snapping would impede the beast's movements. Sanderson had great sport with his pack, hunting bears, bison, and even on one occasion a young elephant. He gives every instruction for getting together a pack, but does not mention the use of greyhounds, though they would evidently have saved his heavy seizers from long tiring runs. Sambur hunting with dogs in Ceylon is an old-established custom, but there apparently the whole pack is hunted together, while Sanderson appears to have kept his seizers up till the quarry came to bay and then slipped them.

Black panthers are occasionally found, but they are merely instances of melanism, several cases of a single black cub in a litter being recorded. As a rule, these black specimens are only found in heavy forests, not in the more open ground, and they are more common in the south of India than the north. There is a lovely stuffed specimen in the British Museum, upon which the markings are just discernible in certain lights.

VI. THE CLOUDED PANTHER (*Felis Diardii* vel *Macrocelis*)

Native names: 'Tungmar' Lepcha; 'Zik' Bhotia; 'Lamchitta' of the Khas tribe (*Sterndale*)

This panther seems to be entirely a forest animal. It extends from Nepal eastwards through Assam.

Kinloch gives an instance of one having been shot, but

specimens are very rarely obtained, though occasionally live cubs have been bought from natives.

The chief peculiarities of this species are the extreme beauty of the colouring, and the fact that the upper canines are the longest in comparison of all living felines.

VII. THE HUNTING LEOPARD (*Felis jubata*)

Native names: 'Chita' generally; 'Yuz' of the Chita-catchers (Sterndale)

This animal is generally found in Central or Southern India. The writer has never heard of it in the Punjab or North-West Provinces. According to Sterndale, it is most common in Jeypur in Upper India and Hyderabad in Southern India.

In general colour it is like a panther, except that its nose is black instead of pinkish; it has a mane on the neck and long hair on the belly; its spots are single and not in rosettes. Its shape is quite different from that of the panther. Instead of having the muscular forearm, short legs and rounded body of that beast, it is a tall greyhound-like animal with thin long legs, and toes like a dog, the claws being only semi-retractile.

It is not often shot, but most native princes have tame specimens for hunting antelopes. These have to be caught when nearly full grown, as cubs cannot be trained for the sport, and chita catching is a regular profession in certain districts. In Sterndale's 'Mammalia of India' there is an interesting account of catching chitas quoted from 'The Asian.' As regards its habits when wild, the writer says:

> It is said by shikaries to feed only once every third day, when, after gorging itself, it retires to its den for the other two. On the morning of the third day he visits some particular tree, which the animals of his species in the neighbourhood are in the habit of frequenting. Such trees are easily to be recognised by the scoring of the bark, on which he whets his claws. From this meeting place, after having played about with such of his comrades as may be there, they go off on a hunting expedition.

Here is evidently the tip for any sportsman wishing to

shoot one : find a tree with tracks three days old, and sit up in it on the fourth morning.

Sterndale says :

> Chita kittens are quite grey without any spots, but can always be recognised by the black stripe down the nose, and on cutting off a bit of the soft hair I noticed that the spots are quite distinct in the under fur. As a rule the young of all cats, even the large one-coloured species, such as the lion and puma, are spotted, but the hunting leopard is externally an exception, although the spots are there lying hid.

Hunting antelope with chitas has been described *ad nauseam*, and is in the opinion of the writer very poor sport. It is worth witnessing once, if only to see how fast a chita can go.

VIII. THE OUNCE, OR SNOW LEOPARD (*Felis Uncia*)

Generally, '*Safed Chita*' ; *Thibet*, '*Stian*'

The ounce is fairly common on the higher ranges ; there are few ibex grounds on which its tracks will not occasionally be seen, but owing to its nocturnal habits it is very rarely met with. It preys chiefly on ibex and burrel, and rarely, if ever, descends to the forest line. It will kill sheep and goats. A farm in Lahoul, belonging to the Moravian missionaries, suffered considerably in 1884 from the depredations of a pair of ounces that lived in the valley behind Kielang. The male of this pair was killed by an officer of the Royal Artillery, who saw the ounce on his return from shooting late in the evening. The next day he went back up the nullah prepared to spend the night out, shot a young male ibex and dragged the carcase down to where he had seen the ounce the day before. Just at dusk the ounce came to the bait and was missed clean with the first barrel ; however, the sportsman, being highly favoured by the gods, bagged him with a second shot, and next morning brought him in triumph down to Kielang. The skin was a beauty, very pale yellowish white with black spots and black rings on the thick furry tail.

From the amount of slaughter ounces effect among ibex, it is probable that they hunt in pairs. In 1874 a sportsman in Pangi found a flock of five or six male ibex lying dead within a few yards of each other, killed by ounces; he had seen this particular flock some days before, had either disturbed them or was unable to get at them, and had given them a few days' rest to settle down in. When he did go after them he found that they had all been slaughtered.

IX. THE THIBETAN LYNX (*Felis Isabellina*)

Thibetan, '*Ee*'

This beautiful animal is very rarely met with, but as the Tartars know it well by name, it is possible that it may be more plentiful than is commonly supposed; its nocturnal habits, as in the case of the ounce, shielding it from observation. The Tartars aver that it frequently kills sheep and goats; but though the lynx is quite powerful enough to do so, it is probable that the natives occasionally confound the lynx with the ounce. The lynx stands about 17 ins. at the shoulder, and is of enormously powerful make, with teeth and claws large enough for an animal of twice its size.

The Thibetan lynx has the orthodox prominent whiskers which are absent in the red lynx of the plains, but it differs from the European variety in the pads of its feet being prominent and bare, with short close fur between them, whereas in the European lynx the long fur completely conceals the pads.

The red lynx, *Felis caracal*, called by natives 'Siagosh,' is occasionally met with all over India. It is not common anywhere, or at least, possibly owing to its nocturnal habits, it is not often shot. A few are known to have been shot in Central India. It preys chiefly on hares, birds, and small deer. Sterndale gives the following measurements: Head and body, 26 to 30 ins.: tail, 9 or 10 ins.; height, 16 to 18 ins.

Measurements

Authority	Total length	Tail	Height at shoulder	Remarks
	FELIS PARDUS			
	ft. ins.	ins.	ins.	
Col. Gordon Cumming ('Wild Men and Wild Beasts')	7 10	..	..	Male
	7 8	..	..	,,
Capt. A. G Ferguson .	7 8	..	..	
Col. Howard . .	7 4½	..	..	Male
Mr. H. L. Heber Percy . . .	[1] 7 4	..	..	Nepal, Dec. 9, 1892
,, ,,	[1] 7 1	..	..	,, Jan. 30, 1891
Sir E. Durand, Bart.	[1] 7 1	..	..	,, Jan. 17, 1891
Major FitzHerbert .	6 8½	..	26½	Male
Col. Kinloch . .	6 4	..	..	Female
Col. Howard . .	6 0	..	..	,,
	ft. in. ft. in.			
Sterndale's 'Mammalia' . . .	7 0 to 8 8	30 to 38	..	Pard
,, ,,	5 6 ,, 6 0	30	18 to 24	Panther (female)
	ft. in.			
Sanderson ('Thirteen Years among the Wild Beasts') .	6 8	..	..	,, ,,
,, ,, .	6 3½	..	26	,, ,,
,, ,, .	6 10	..	..	
,, ,, .	5 4	..	..	Leopard (male)
,, ,, .	5 2	..	..	,, (female)
	FELIS DIARDII			
Sterndale . . .	6 4	36	..	Jerdon states that it grows to a larger size
	FELIS JUBATA			
Sterndale	7 0	30	30 to 33	
	FELIS UNCIA			
Sterndale . . .	7 4	36	24	Measurements apparently too big
Major Ward ('Sportsman's Guide to Kashmir') . .	6 4	36	..	Male
	6 0	33	..	Female
Capt. Dawkins (May 24, 1884.) . .	5 11½	36	18	Male

[1] Measured between uprights

X. WOLVES AND WILD DOGS

Space does not permit an exhaustive description of these vermin, and it must be briefly said that there are three kinds of wolves in India. First is the ordinary wolf of the plains (***Canis pallipes***), which is more destructive to children and cattle than to game, and is generally called 'Bheria' by the natives.

Authenticated tales of its ravages among the infant population are only too common, an old bitch wolf with cubs laid up near a village naturally finding Indian baby the most easily procured and most succulent diet for her offspring. Wolves have occasionally been ridden down and speared, but only when found in the morning, and more or less gorged; a wolf in the evening, when empty, will lope along just ahead of good greyhounds till the latter lie down exhausted. They can occasionally be smoked out if their earths are found. Williamson describes a big bag made in this way near Allahabad in 1780; the earths were dug out, and at least ten pounds weight of children's ornaments found in them. He also narrates a ghastly story of the way wolves attacked the starving natives during the famine of 1783 in broad daylight; as a rule, however, they seldom attack men.

The next well-known varieties are the grey and black Thibetan wolves (*Canis laniger* and *Canis niger*), generally called 'Chanko.' These are very destructive to game as well as to flocks and herds, as they hunt in small packs. Both grey and black wolves are found together, and interbreed. The black wolf is said to be rather the larger, but it is an open question whether the varieties are distinct or not, in spite of the fact of the black specimens Colonel Kinloch presented to the Zoological Gardens only producing black cubs.

A third variety of 'Chanko,' called the 'golden wolf,' has been mentioned by sportsmen, but this may possibly be the European wolf (*Canis Lupus*), which extends to Turkestan.

The chief points of distinction between the three varieties of wolves, i.e. European, Thibetan, and Indian, are as follows: in the European wolf the carnassial tooth is as long as the two molars together, which is not the case with the others; it has also a dark stripe on the forelegs, which the others have not; and, lastly, the European and Indian wolves have black tips to their tails, which the chanko has not.

The remaining species of vermin is the Wild Dog (*Cuon rutilans*), generally called 'Jungli-Kutta': in Cashmere 'Ram

Hun.' These veritable pests are found everywhere, and as they hunt in large packs are most destructive to all kinds of game, absolutely clearing out whole tracts of country, even being credited occasionally with killing tigers, which, as Sanderson points out, is by no means impossible if the tiger attempts to run away, and they get a chance of making their favourite attack from behind. He narrates two occasions on which he saw deer eviscerated by one or two snaps from wild dogs. They rarely, if ever, attack men, and are more like big red jackals than dogs. The cubs are quite untamable, and are the nastiest, most evil-smelling, vicious pets that heart could desire.

Measurements

Authority	Total length	Tail	Height at shoulder
	CANIS LUPUS		
	ins.	ins.	ins.
Sterndale	62 to 68	20	30 to 32
	CANIS PALLIPES		
Sterndale	52	16 to 18	26
	CANIS LANIGER		
Sterndale	68	20	30
	CUON RUTILANS		
Sterndale	48 to 52	16	17 to 20
Major Ward	60	..	..

XI. THE STRIPED HYÆNA (*Hyæna striata*)

Native names: 'Lakhar baghar' generally; 'Rerha,' Central India

This is scarcely a sporting beast, but being destructive to dogs is generally saluted with a shot if found by daylight, a thing which does not often happen. The striped hyæna is a large brute, with tremendous power of jaw, which lives principally on carrion, and will pick up a dog if found alone, though two or three dogs will easily beat it off. The hyæna has often been ridden down and speared, and shows little or no fight in spite of its large teeth. Hyænas are found all over the plains

of India, but apparently neither in Burmah nor Ceylon. There were several which used to prowl about the barracks at Nowgong in Central India when the writer was quartered there, two or three of which were shot by the soldiers, and the jackals there paid them all the honours usually accorded to tigers, following them and uttering their peculiar note of warning which the natives call 'kole baloo.' The writer has often heard this cry, and as long as it continues no jackal within earshot will set up his ordinary howl. This hyæna is the common species that is found throughout Persia, Asia Minor, and North Africa.

Sterndale gives its length as $3\frac{1}{2}$ ft., head and body; tail, about $1\frac{1}{2}$ ft. The writer never measured one, but estimated the height of an old male as about 22 ins.

XII. ELEPHANT (*Elephas indicus*)

Native names: 'Hati' generally; 'Anay,' Canarese (Sanderson); 'Allia,' Singhalese (Sterndale).

The elephant is found along the foot of the Himalayas, from Deyhra Doon through Assam and Burmah to Siam; also in some parts of Central and Southern India and Ceylon.

The difference between the Indian and African elephant is well marked; the small ears, smooth trunk, and more intelligent head of the former being very conspicuous. The marks on the grinders are also different, being in the Indian elephant irregular loops, while in the African they form a string of decided lozenges joined by the corners. The African elephant has only three toes on the hind foot, while the Indian has four. The point of difference, however, which chiefly concerns the sportsman is that in the Indian elephant there is a cavity in the skull behind the bump on the top of the trunk which enables a bullet properly placed to reach the brain, while with the African variety this cavity is protected by the roots of the tusks, making the front shot ineffective.

The main points to be considered by the sportsman may be shortly summarised as follows :

The brain, which at most only presents a mark of about twelve inches in length by six inches in height, is situated low down and far back in the skull, the centre of it being nearly in the line between the two ear-holes. The three chief shots are the front shot, in the centre of the forehead towards the top of the bump at the base of the trunk, and about three inches higher than a line drawn between the eyes ; the temple shot, the head of the elephant being at right angles to the sportsman, through the ear-hole in a line to pass through the opposite ear ; the rear shot, behind the ear in the hollow just over the large bump at the junction of the jaw and neck. It must be taken at about an angle of 45° with the elephant's course from behind. These are the shots to be tried for ; if the elephant's head is inclined at an angle, calculation has to be made to determine the line of the brain. If charging with the head carried high and trunk curled, it is almost impossible to kill him with a front shot, but heavy rifles will generally stop him. In head shots an elephant not killed on the spot generally escapes, so no time should be lost in finishing one that is floored. For weapon, a 4-smoothbore spherical ball with twelve drachms of powder is recommended. Indian elephants are seldom shot behind the shoulder, for as Sanderson says, 'When an elephant can be approached to within a few yards, and dropped on the spot, it is hardly sportsmanlike to take a long shot, and risk wounding the animal uselessly.' Females in a herd are always the first to charge. The tuskers are most likely to be found in the rear guard of a herd, and the animals should not be approached in cover unless they are feeding. A peculiar short, shrill trumpet is the sign that the hunter has been discovered ; the herd stands perfectly still for some minutes and then closes up and moves rapidly off ; or, if the elephant that perceives danger discovers that it is very near, it retires quickly without a sound, wed by the rest, so that the hunter may find the whole e before he is aware that he has even been perceived.

If a herd is attacked it stampedes, and if hard pressed the females with calves will charge.

When a herd stampedes in cover, as it is impossible to tell the direction it will take, the best course the sportsman can adopt is to stand still against a tree or a bamboo clump, and not attempt to run. A tree eight inches in diameter is said to be about the largest that an elephant can overthrow. If circumstances ever occur to make a run unavoidable, the flight should always be down hill and the steepest places at hand chosen, as elephants fear to trust themselves on a rapid descent at any great pace ; up hill or on the level a man would be speedily overtaken on rough ground.

When a herd makes off it goes at a great pace for a short distance and then settles into a fast walk, which is often kept up for ten or fifteen miles if there is a wounded elephant and no young calves with it. The sportsman should pursue at once, as an ordinary runner can generally keep near for two or three hundred yards.

When elephants are close at hand, standing in indecision, no one should shout to turn them, as a charge from one or more of them is almost sure to be the result. A friend of the writer's told him that once when stalking an elephant he could not get a fair shot at his head, so he whistled to make him turn ; the elephant simply swung round and charged, but a shot in the head, though it did not floor, turned him.

The impression of the tusks in soft soil gives a good idea of their size. A groove that will admit five fingers means that the tusks will probably weigh over 60 lbs. the pair. Twice round the forefoot gives the height of the elephant at the shoulder.

In shooting single elephants, after the first rush of a hundred yards or so all noise often ceases, as the elephant breaks into a walk, and a novice would suppose that he had stopped when in reality he is rapidly retreating.

In following wounded elephants it is a good plan to send a couple of trackers ahead while the sportsman and his gun-

carriers follow a hundred yards in rear, as the trackers, if alone, are not likely to be taken by surprise. Rogue elephants, though more liable to attack in the first place, are not more determined than others; a female with a young calf is much more likely to charge persistently, and the advantage of having only one animal to deal with is immense.

The wild elephant's attack is one of the noblest sights of the chase. A grander animated object than a wild elephant in full charge can hardly be imagined; the cocked ears and broad forehead present an immense frontage; the head is held high, with the trunk curled between the tusks to be uncoiled in the moment of attack; the massive forelegs come down with the force and regularity of ponderous machinery, and the whole figure is rapidly foreshortened, and appears to double in size with each advancing stride. The trunk being curled and unable to emit any sound, the attack is made in silence, after the usual premonitory shriek, which adds to its impressiveness. A tiger's charge is an undignified display of arms, legs, and spluttering; the bison rushes blunderingly upon his foe; the bear's attack is despicable; but the wild elephant's onslaught is as dignified as it seems overwhelming; and a large tusker's charge, when he has had sufficient distance to get into full swing, can only be compared to the steady and rapid advance of an engine on a line of rail. With all this, the sportsman who understands his game knows that there is a natural timidity in the elephant which often plays him tricks at the last moment. It is not difficult to turn or stop him with heavy metal, and if knocked down, he never, I believe, renews the attack.

Thus Sanderson writes, and in conventional phraseology that is all very fine; but Sanderson seems to have let his feelings run away with him. I confess that a tiger charging never appeared undignified to me; his charge has always struck me as being a particularly neat, business-like performance, and the coughing roar that accompanied it did not at all detract from the show—spluttering indeed! Sanderson's elephant does not roar because he is afraid of hurting his trunk. Then the poor bison a blunderer! The way an old bull will charge, dodge behind a bush till he sees someone following him or hears someone

speak, and then charge back again, shows an amount of systematic 'cussedness' which deserves praise not ridicule. As for the bear, his best friends must admit that his natural grotesqueness is only enhanced by his efforts at retaliation; but he does his best.

With a single exception, all those elephants which Sanderson shot behind the shoulder seem to have given him a long chase before he could bring them to bay, probably because the position of the heart is much harder to judge in the Indian than in the African species, the centre of the outside edge of the latter's ear when thrown back marking the spot. It is not so with the Indian elephant, whose ear is smaller.

A fight between two wild tuskers is said frequently to last for a day or more, a round being fought every now and then. The more powerful elephant occasionally keeps his foe in view till he perhaps kills him.

Though elephant catching is of old date, shooting wild elephants seems to have been unheard of at the beginning of the century. Williamson, who wrote about the year 1805, remarks with reference to M. Vaillant's exploits in South Africa:

> Without disparagement to M. Vaillant's veracity, I should think I might with great safety venture a wager that no native of Bengal, nor any European resident there, would undertake such a piece of rashness as to go out shooting wild elephants; and that, in the event of anyone possessing such temerity, the sportsman would come off second best. M. Vaillant performed his miracles in a wilderness, without anyone to record his achievements; consequently he was obliged to be his own historian. Persons under such circumstances are in possession of one great advantage: namely, that of relating not only the facts as they would appear to any common observer, but of describing the wondrous coolness and presence of mind which pervades them throughout the perils of the enterprise.

Sanderson says the largest elephant he has seen measured 9 ft. 10 ins. at the shoulder, and declares there is not a 10-ft. elephant in India. Colonel Kinloch measured one he shot

10 ft. 1 in., and the writer has seen a foot in Mr. Rowland Ward's shop that measured 5 ft. in circumference, which should make the animal 10 ft. at the shoulder.

Sterndale gives 10 ft. 7½ ins. as the largest authentic measurement on record, and oddly enough quotes Sanderson as authority for the measurement of this elephant, which belonged to the Sirmoor Rajah.

As regards tusks, Sanderson's biggest pair measured 4 ft. 11 ins. and 5 ft. respectively, with a girth of 16½ ins. at the gum, the pair weighing 74½ lbs.

Sir Victor Brooke's big tusker measured : Right tusk, 8 ft. ; 5 ft. 9 ins. outside socket ; girth 1 ft. $4\frac{9}{10}$ ins. ; weight, 90 lbs. Left tusk, 3 ft. 3 ins. ; 1 ft. 2 ins. outside socket ; girth, 1 ft. 8 ins. ; weight, 49 lbs.

The skeleton of the well-known Arcot rogue elephant, now in the Madras Museum, measures 10 ft. 6 ins. at the shoulder. Mr. Rowland Ward considers that when alive it must have stood 10 ft. 10 ins.

'Jumbo,' the African elephant in the Zoological Gardens, stood 11 ft., and Sir S. Baker says that African elephants measure 12 ft. or more.

The three largest African tusks recorded in 'Horn Measurements,' by Rowland Ward, are :

Length	Greatest circumference	Weight
ft. ins.	ins.	lbs.
9 5	22½	184
9 4	20½	160
9 4	18	110

XIII. RHINOCEROS

There are no fewer than four different kinds of rhinoceros to be found in India and Burmah ; viz. *Indicus*, *Sondaicus*, *Lasiotis* and *Sumatrensis*. The first, which is the most generally known, extends from the Nepal Terai to Assam. The second

is found in the Sunderbuns, and from Manipur through Burmah to the Malay Peninsula; the third is found in Arakan and Tenasserim; the fourth, from Tenasserim through Burmah to Siam and the Malay Peninsula; the two first varieties being one-horned, the two last two-horned. The Asiatic rhinoceros differs from the African in three particulars: the skin is divided into shields by well-marked folds; he has long upper cutting teeth (the African having none), and the nasal bones of the skull are produced and conical instead of broad and round (Sterndale).

The chief difference between *R. indicus* and *R. sondaicus* is that the latter has a well-marked fold in front of the shoulders, the line running over the back of the neck, whilst in *Indicus* it dies away on the shoulder-blade; the head of *Sondaicus* is also somewhat slenderer, and the female has no horn. In *Indicus* both sexes have this horn, and the curious tesselated appearance of the hide in one is very different from the tuberculated armour of the other.

Though *Sondaicus* has been described as the lesser Indian rhinoceros, there is little difference in the size between this and other Indian varieties.

R. lasiotis and *R. sumatrensis* have more or less hairy hides instead of tubercles. *Lasiotis* is larger, lighter in colour, with wide-set ears, a short tufted tail, and a long fringe of hair on the back edge of the ear; *Sumatrensis* is smaller, darker, with close-set ears (which are filled with black hair but have no fringe), and tail long, tapering, and semi-nude.

The native names of all four varieties seem much the same: 'Gaindá,' 'Gairá,' 'Gonda,' generally; 'Gor' Assam, 'Khyenhsen' Burmah, 'Bodok' Malay.

The rhinoceros does not extend to Central and Southern India, being only found in the heavy grass swamps of the Terai, Assam, &c.; consequently the only way of hunting this beast is with elephants. The rhinoceros may be either tracked up to his lair on a single elephant, or the jungle may be beaten as for tigers.

In no branch of sport is it more necessary to have trust-

Measurements

Authority	Height at shoulder	Length head and body	Tail	Girth chest	Girth forearm	Length of horn	Girth at base	Remarks
				R. INDICUS				
	ft. ins.	ft. ins.	ft. ins.	ft. ins.	ft. ins.	ins.	ins.	
Col. Kinloch, 'Large Game Shooting'	5 9	10 6	2 5	9 8	3 2	12	..	
British Museum	..	..	..	..	..	19	20½	
" "	..	..	..	..	..	38	26½	Single horns—doubtful specimens
" "	..	..	..	..	..	33½	27	
				R. SONDAICUS				
Sterndale	5 6	12 3	2 4½	..	..	..	..	The length 12 ft. 3 ins. appears to include tail
				R. LASIOTIS				
	No measurements procurable							
				R. SUMATRENSIS				
Sterndale	3 8	..	..	..	..	..	..	
British Museum	..	..	..	..	..	27	17½	
" "	..	..	..	..	..	32¼	17¼	
Mr. A. Manson, 'Oriental Sporting Magazine,' 1876	..	..	..	..	..	8½	..	Rear horn merely a knob

worthy men in charge of the mahouts of the pad elephants. A rhinoceros when roused makes such a noise crashing through the reeds and snorting, that, though he rarely charges home, and even then only bites instead of using his horn, he fairly terrifies both mahouts and their animals, and consequently, unless the line is under good control, the beating is carried out in a very half-hearted manner. The usual pace of a rhinoceros is a trot, but he will sometimes break into a gallop and gets over the ground with surprising speed. When shot they usually sink down on their knees and rarely roll over on to their sides. The flesh is said to be as good as, or better than, most Indian beef. The track is easily distinguished, as the foot has only three toes.

There is a story of a fight having been witnessed between a rhinoceros and a wild male elephant, in which the latter was worsted. A rhinoceros is said to have wantonly attacked the camp of two officers from Dinapore, near Derriapore, in 1788. The brute killed their horses, which were picketed, treed the officers and their servants, and 'after keeping them in dreadful suspense for some time, and using some efforts to dislodge them, seeing the sun rise, retreated to his haunt.'

Their habit of depositing their dropping on the same spot, which is shared by many deer and antelopes, has been noted by all writers on the subject. Native shikaris watch these large heaps and take poor rhino at a disadvantage.

XIV. THE MALAY TAPIR (*Tapirus malayanus*)

Native names: 'Ta-ra-shu,' Burmese; 'Kuda-ayer,' Malayan

Sterndale says of it:

Habitat: Tenasserim provinces, as high as 15° N. Lat., Lower Siam, the Malayan Peninsula, Sumatra, and Borneo. Description: General colour glossy black, but with the back, rump, and sides of the belly white; the young are beautifully variegated, being striped and spotted with yellow fawn on the upper parts of the body and with white below. Mr. Mason writes: 'Though seen so rarely,

the tapir is by no means uncommon in the interior of the Tavoy and Mergui provinces. I have frequently come upon its recent footmarks, but it avoids the inhabited parts of the country. It has never been heard of north of the valley of the Tavoy river.' The tapir is naturally, all the world over, a very shy, retiring animal, but it is capable of being tamed when taken young, and of showing great attachment. It is not found in India proper, but is occasionally come across in Burmah.

Measurements

Authority	Height	Length, head and body	Remarks
British Museum .	36½ ins.	75 ins.	A skeleton, tail with some vertebræ wanting

XV. WILD BOAR (*Sus indicus*)

It is a maxim in India that the only sportsmanlike way of killing boar is with horse and spear, and therefore as these volumes treat principally of those beasts which fall or should fall to the rifle, this pluckiest of all beasts must be dismissed with a very brief notice.

Occasionally there may be some justification for shooting boar, but as they travel great distances, none ought to be shot within forty miles of rideable ground.

Several cases are on record in which an old boar has beaten off a tiger, and some in which the latter has been killed by a boar. The boar's extraordinary activity and sharp tusks make him no mean adversary, and his short neck makes it difficult for a tiger to seize it and give it that fatal wrench with which he likes to polish off his victims.

XVI. THE PIGMY HOG (*Porcula salvania*)

Native names: 'Sano-banel,' Nepal; 'Chota soor,' Hindi

This tiny little wild pig is found in the Sal forests of Nepal and Sikkim. It has the reputation of going in herds like the

peccary and attacking intruders in the same fearless way. In shape it only differs from the common wild pig in that its snout is comparatively shorter, and the eye consequently set midway between snout and ear. Its tail, too, is short and is hidden among the bristles on the rump. It has long bristles all over its back and sides, but no well-defined mane like an ordinary boar, whilst its ears are quite hairless and the under parts of the body and limbs almost so. Some stuffed specimens in the British Museum of apparently half-grown beasts are deep chestnut, a full-grown one being nearly black.

Measurements

Authority	Length, head and body	Height	Weight	Remarks
Sterndale . .	18 to 20 ins.	8 to 10 ins.	7 to 10 lbs.	
British Museum .	28 ins.	11½ ins.	..	A stuffed specimen, tusks 1 in.

XVII. CROCODILES

Native names:

'Muggur,' the snub-nosed variety; 'Ghayal,' the long-nosed variety

The crocodile is a kind of vermin, of which there are two varieties in India—the flat-nosed and the long-nosed. Though not perhaps objects of the highest form of sport, still a good deal of fun may be had with them; and as they are awful brutes for robbing the sportsman of any birds that may be dropped on the water—will take down his dog if he sends it in to retrieve, and in many places will take human beings—their destruction should invariably be attempted.

A few may be shot with a rifle, but they are uncommonly wary, and nineteen out of twenty that are hit will get back into the water and be lost. The most satisfactory way of dealing with them, besides being far the most sporting, is to bait a good large hook with a bird or small animal, and fasten it by

a chain to a good long rope, the end of which is firmly picketed, the rope being coiled and the bait laid in shallow water. There must be lots of slack line, as the crocodile does not swallow anything at once, but seizes it and takes it into deep water to gorge. A number of lines may be laid and looked up in the morning or cool of the evening. When hooked it will take a good many men to haul a crocodile out, and as he resents the operation and can use his tail as well as his jaws, one or two sportsmen will find considerable entertainment in despatching him with spears. Some crocodiles grow to an enormous size, and their maws always contain round white

Landing a ghayal

stones, and often trinkets, the relics of inside passengers. The writer assisted at the death of a not extraordinarily large 'snub-nose,' which had six women's rings in her. This beast was a female, and full of eggs. Another plan worth trying is to tie up a kid in the evening as a bait, just sufficiently far from the water to attract the crocodiles by its bleating on to dry land, so that the sportsman, lying well hidden about sixty yards off, should be able to make sure of shooting them through the back of the head.

Measurements.—British Museum: a snub-nose, 17 ft. 4 ins.; a long-nose, 15 ft. 1 in.

XVIII. GAUR (*Gavæus Gaurus*)

Native names: 'Gaor,' 'Gaori-gai'; generally, 'Gail,' Chota Nagpur; 'Khulga,' Western Ghauts; 'Karti,' Mysore; 'Mithan,' Bhootan.

Gaur, or bison,[1] as they are usually called, are found in suitable localities, from the Terai, through Bhootan, Assam and Burmah, to the Malayan Peninsula and throughout Central and Southern India, but do not extend to Ceylon. The 28th degree of North latitude seems their extreme northern limit, otherwise it would be difficult to account for their absence in what appears to be such thoroughly suitable ground as the Sewalik range and the lower slopes of the Himalayas north of this limit, although elephants, whose food and requirements are almost identical with those of the gaur, are plentiful there. Hilly country, covered with extensive tracts of forest and bamboo jungle, is the likeliest ground for bison, though they occasionally visit the low ground at the foot of the hills, particularly when driven from the higher ridges by flies and the want of suitable pasture. Bison vary much in their habits according to locality; their migrations from high to low ground being mainly influenced by the rainfall (which regulates the growth of grass) and the prevalence of flies in their district. During the latter part of the rainy season, when the grass has grown high and coarse and flies are most numerous, Sanderson remarks that bison move into the thinner jungle at the foot of the hills. Forsyth says that in Central India bison retire to the tops of the hills at that season.

The general colour of an old bull bison is a dark brown, almost black, with a light slaty patch on the forehead, a grey muzzle, and the legs, from above the knees and hocks downwards, a yellowish white, the inside of the forearms and thighs being chestnut; the head is particularly handsome, and well-bred-looking, the high frontal which rises above the base of the

[1] There are no true bison in India, both gaur and buffalo having thirteen pairs of ribs, while the true bison has fourteen pairs.

horns adding to, rather than detracting from, its beauty ; the pupil of the eye is large, and of a pale blue colour. Jerdon says the eyes are small. They may be in actual measurement, but they certainly do not appear so. The muzzle is large, and the ears broad without being coarse. The ears of an old bull are often torn to ribbons from fighting. The horns of such animals are rather rugged at the base, and the points are chipped and worn ; but they are massive, have a beautiful outward curve, and are light coloured. The neck is short and powerful, the skin rather loose, with curious wrinkles in it that give the appearance of a small dewlap, which the beast is really destitute of. Behind the neck the beauty of the bison vanishes. The high dorsal ridge towering above the insertion of the neck makes the shoulders look loaded and straight, and the neck itself put on too low ; the ridge running down to the centre of the back and there ending abruptly gives the quarters a dwarfed and drooping appearance, though this is far from being really the case. The tail is rather short and fine ; the legs are particularly fine and clean, the hoofs being marvellously small and neat for so large an animal.

The cows, less heavily built than the bulls, are of a coffee-brown colour ; the dorsal ridge is not so much developed, though it is still prominent ; the legs are white instead of yellow —the writer heard an old bull described as looking as if he was wearing gaiters. The horns are thinner and more upright ; young bulls are very like cows, and mistakes are frequently made when stalking herds, except by really experienced men. Old cows look enormous, they are often darker in colour than young bulls (in certain lights they look almost black), and are not unfrequently shot by mistake. Of course if there is an old bull in the herd to compare with them, there is little chance of error. The best bulls are those that have been driven from the herds by younger and more active rivals, and henceforward live alone. These solitary bulls are always the finest specimens, and are consequently the chief objects of the sportsman's ambition. It is a very curious fact that bison appear to be the

only animals which regularly resign, or are ousted from possession of, a herd when they attain their largest size and most powerful horns. Old stags will keep their hinds even when their horns are diminishing from age. Sanderson says solitary elephants are frequently young males waiting till they can appropriate a herd; but no sooner does a bison get really at his best to all appearances, than he at once gives way to a younger animal. The cream of bison shooting is naturally stalking them on foot. Sanderson describes hunting them on an elephant, a method which, of course, enabled him to bring heavy rifles into the field without fatigue, and was of enormous assistance in thick cover and in carrying the trophies; but his using the elephant to make the first approach must have considerably detracted from the sport, although he discarded his mount when following up a wounded beast.

The writer has had bison driven to him, on ground where stalking was impracticable owing to the density of the forest, and where the dryness of the season rendered tracking impossible; but there the fun only began when a wounded beast had to be followed up, though it was pleasant listening to the avalanche-like rush of an approaching herd, and amusing to see cows come through an apparently impenetrable thicket of bamboos, like harlequin through a trapdoor, only to stand staring at a few yards distance with their noses poked out, an expression of puzzled funk in their eyes.

But when the first few showers of the rainy season have moistened the dry crackling leaves, and softened the ground so that tracks can be followed, you should start in the early morning so as to catch the beast before he is down for the day (that is, before the sun gets hot, about 9 A.M. according to Sanderson), and getting on the fresh tracks of a solitary bull, follow him up. If your trackers are good, you should soon begin to find signs that you are getting near him (the droppings warm, &c.); you can then dismount from your pony which you have been riding in rear, and close on the trackers with your gun-carrier till they show you the beast. But whether your

A CHARGING GAUR

trackers are good or not, it is quite useless for you to interfere with them unless you have sufficient experience to do the tracking yourself and let the men follow behind. You must take it for granted they are doing their best; the fact of their being on a bison's trail will ensure their running no undue risk from carelessness, and if you interfere you only confuse and put them out: therefore take Sanderson's advice, unless they wish you to keep close to them, which they probably will not do, ride your pony comfortably about one hundred yards in rear, till they signal you up. You should then be either pretty close to or within sight of your game. It is assumed that you have two rifles, an 8-bore and a 12-bore, with round bullets; conical bullets are not to be relied on in jungle. Try to approach within sixty yards, and get your first shot in with the 8-bore. Should the bull bolt, run after him at once, whether you have fired or not. Very likely he will pull up after going a short distance and give you a chance. Aim well forward; if you break his shoulder you are more likely to get him than if you take him too far back; keep him in sight as long as you can; if he goes out of sight sit down and smoke a pipe or have breakfast. In any case give him half an hour, then follow up with your trackers, carrying the 12-bore yourself and your gun-carrier the 8-bore. If the track lead into thick stuff, send a man up the first tree you come to, and if he cannot see the animal, work carefully on to the next tree in the direction the track leads, though not necessarily on it. Work clean through the thick patch in this way from tree to tree, till you get to the far side; never mind the trail inside. Should you get through without seeing the beast, try to pick up the trail outside, and if you fail in this go back the way you came to where you lost the track, and try working through it from tree to tree in another direction. If your lines have formed a not too broad angle at the point you left the trail, and you cannot track him outside, the bull should be within the triangle, and if there are no more trees, you must follow the trail. Should the jungle happen to be 'Kharwee,' the stems of which are about

as thick as your finger, growing about six inches apart and eight feet high, you will find it exciting enough. The bull will probably turn short off at an angle just before he lies down, and if he means mischief will be watching his trail; you will then probably get within ten yards of him before you see him, in which case you will be able to realise the sensations of a valiant mouse hunting a man in a stubble-field. At this period in the chase you will naturally have the 8-bore in hand again. Presently the bull will either start up close to you, or you will perceive a black mass on the ground. Your only course then is to fire and lie down on the ground at once; the smoke will prevent your getting in a second barrel, and if the bull charges the smoke he will gallop over you without seeing you. It is not a bad plan to leave a man permanently up the first tree you reach to watch till you have quite done with the cover, as he will probably be able to see where the bull goes if he moves. If the bull is wounded again in thick stuff and again lies down in it, he is probably past doing harm; but still it is advisable to give him the time of another pipe. A man up a tree who can watch the exact place he is lying in is invaluable. Natives at this period of the chase, more particularly the inexperienced ones, invariably get excited and lose their heads, offering to go in and pull the bull out by the tail, and looking upon any precaution taken as a sign of faint-heartedness on the part of the sportsman. If the sportsman gives way to them and allows them to accompany him in the final stalk, he will probably get some fool hurt through disobedience of orders. The last approach to a wounded bull in thick cover should invariably be made alone, or with one gun-bearer, the rest of the men being put up trees.

Solitary bulls, Sanderson declares, are not a bit more savage by disposition than herd bulls, and the instances of their attacking natives when unwounded are almost invariably due to the bull being approached unawares within striking distance in the midst of thick cover.

He narrates a case of a gentleman being killed on the

Putney Hills in 1874, but this was through incautiously following a wounded bison into thick cover. In this case the beast went on at once, after killing his victim in his rush. 'Only in one instance that I know of has a wounded bison turned and gored his victim. I do not even think the solitary bull is more dangerous when wounded and followed up than a member of a herd. I have seen both die without resistance, and both give some trouble.' An officer on the Head-Quarters Staff at Madras had a very narrow escape from a wounded bull a few years ago, getting knocked down and only escaping by kicking the bull in the face as he tried to gore.

Several writers have noticed that a stag sambur or bull nylghao (apparently it is always a male) occasionally attaches himself to a herd of bison, and that this follower is invariably the wariest and most watchful beast in the herd. Forsyth mentions a bull nylghao in company with a herd of buffaloes. Sanderson states that the bison, after a sharp hunt, gives out an oily sweat, and in this peculiarity it differs from domestic cattle, which never sweat under any exertion. He also says that herd bison retreat at once if intruded upon by man, and never visit patches of cultivation in the jungle ; later on, however, he enumerates three varieties of cattle disease to which they are liable, and states that they sometimes contract these diseases by feeding in jungles used by infected domestic cattle. Of course these two statements are not necessarily contradictory, but the writer when shooting in the Western Ghauts found both herd and solitary bison within a mile or two of villages, saw their tracks on patches of ground cleared for crops in the jungle, on one occasion found bison on the side of a hill overhanging a main road on which there was daily a certain amount of traffic and near enough to it to see and hear the passers-by ; and there was a range of hills, the plateau on the summit of which was a kind of open down where the village cattle were daily brought to graze, and there were a good many bison in the densely wooded ravines and slopes. The writer had been studying Sanderson's book before starting, as every sportsman

Measurements

Authority	Nose to root of tail	Tail	Height at shoulder	Height at rump	Length, dorsal ridge	Height, dorsal ridge	Girth chest	Girth neck	Muzzle to frontal ridge	Breadth forehead	Ear	Length of horn	Girth of horn	Splay at tips	Tip to tip across forehead	Widest span inside	Remarks
GAVÆUS GAURUS																	
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
Sterndale ('Mammalia')	114½	34½	73½	63	40	4½	..	..	25¾	15½	10½	..	19½	25	..	..	Quoting Sir Walter Elliot
,, ,,	104½	37¾	69	..	29½	..	104	48½	24	..	..	..	..	27¼	..	..	Quoting Mr. Blyth
,, ,,	..	..	..	..	..	..	..	..	..	..	..	..	17	22½	83	38½	? Outside
,, ,,	..	..	..	..	..	..	..	..	..	..	..	..	19	19	74	33	? ,,
Sanderson ('Thirteen Years among Wild Beasts')	..	..	72	..	..	..	..	..	..	..	..	..	19	19	74	33	? ,,
Mr. J. D. Goldingham, Bethnal Green Museum	..	..	..	..	..	..	..	..	..	..	..	33⅞	17¼	24	..	..	Rowland Ward, 'Horn Measurements'
Mr. T. W. H. Greenfield	..	..	..	..	..	..	..	..	..	..	..	33½	18¾	25	..	33¼	,, ,, ,,
Mr. J. Carr Saunders	..	..	..	..	..	..	..	..	..	13	..	32	17¼	33½	79½	46	Outside
Mr. A. O. Hume	..	..	..	..	..	..	..	..	..	..	..	31⅞	17⅜	21⅜	..	32½	Rowland Ward, 'Horn Measurements'
Bombay Nat. Hist. Soc. Proc.	..	..	..	..	..	..	..	..	..	..	..	31½	18	29	..	43	Outside ,, ,,
Mr. J. D. Goldingham, Bethnal Green Museum	..	..	..	..	..	..	..	..	..	..	..	31¼	16⅞	12⅞	..	27½	,, ,,
Madras Museum	..	..	..	..	..	..	..	..	..	..	..	L. 30¼ R. 25½	20	16¼	70¾	44	? Outside. 'Smoothbore's' Letter to the "Asian"

Shot by General Cox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	.. .. ..
,, ,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	,, ,, ,,
Lieut.-Col. Sandys	..	..	..	..	..	..	..	..	..	..	..	30½	16⅔	13½	..	33¼	'Rowland Ward, 'Horn Measurements'
Mr. J. Carr Saunders	..	..	..	..	..	..	..	..	..	..	..	30½	17¾	33⅜	..	40¼	Outside .. ..
Sir E. G. Loder, Bart.	..	..	..	..	..	..	..	..	..	..	..	29⅞	18¼	30	..	34	,, ,,
Sir V. Brooke	..	..	..	..	..	..	..	..	..	..	..	29⅞	18¾	25¼	..	30½	,, ,,
,, ,,	..	..	..	..	..	..	..	..	..	..	..	29⅝	18½	16¼	..	26½	,, ,,
Mr. J. D. Inverarity	..	..	..	..	..	..	..	..	..	..	..	29½	18	..	..	33	Outside .. ,,
General Hardwicke, British Museum	..	..	..	..	..	..	..	..	..	..	..	29¼	12⅞	..	..	18	,, ,,
Mr. B. H. Hodgson, Brit. Mus.	..	..	..	..	..	..	..	..	..	..	..	29⅛	16⅝	20⅜	..	29¼	,, ,,
Mr. O. Shaw	..	..	..	..	..	..	..	..	..	..	..	29	22	..	..	..	,, ,,
Major Greenaway	..	..	65	..	..	..	..	..	..	..	..	29	22	..	..	..	,, ,,
The Writer	..	..	..	..	..	..	..	..	..	..	..	27	19 9/10	19 4/10	69 9/10	..	
Col. Kinloch	..	..	..	..	..	..	..	..	..	..	..	..	..	..	69	36	? Outside, 'Large Game Shooting'
..	..	..	..	..	..	..	..	..	..	..	..	..	17	..	66½	..	,, ,, ,,
Forsyth	..	..	71	..	..	..	..	..	..	..	..	..	..	..	..	..	'Highlands of Centra India'
,,	..	..	69	..	..	..	..	..	..	..	..	..	17	..	..	37½	? Outside ,, ,,
..	..	..	..	..	..	..	..	..	..	..	..	25½	15½	..	..	..	,, ,,
Average of good head	..	..	..	..	..	..	..	..	..	..	..	27	18	..	..	..	

should who desires success in the pursuit of bison, and was particularly struck by the tolerance these herds, at all events, showed to the vicinity of natives.

In Assam, Chittagong and Burmah the natives own large numbers of domesticated animals called 'mithun' or 'gayal,' which are very similar to bison in appearance, but are without the characteristic frontal ridge, and are said to have a small dewlap. Sterndale distinguishes these under the name of *Gavæus frontalis*, and quotes Dr. F. Buchanan Hamilton and Professor Garrod's account from Mr. Macrae to the effect that the natives recruit their tame herds by catching and taming wild animals. But both Sanderson and Kinloch, who have hunted in the districts where the tame gayal are numerous for the express purpose of bagging a wild one, declare that such an animal does not exist, that the wild animals in those parts are the same as bison anywhere else, and that the peculiarities of the tame ones are due to domestication and inter-breeding with domestic cattle.

As regards measurements of heads, the same disappointing practice prevails with bison as with buffalo, viz. : measuring from tip to tip of the horns across the forehead, in addition to which (with bison) heads are frequently estimated only as regards the width of splay between the horns, without any reference to their length and girth. This latter measurement is the more misleading, as a deformed head with unnatural lateral sweep is more valued than one with long massive horns which grow closer together. The fairest measurement is length and girth at base of horn only.

XIX. BURMESE WILD OX (*Gavæus sondaicus*)

Native names: 'Tsoing,' Burmah ; 'Banteng,' Java ; (Sterndale). Habitat: Burmah, the Malayan Peninsula, Sumatra, Borneo and Java. Blyth says it is domesticated in the Island of Bali.

This animal resembles the gaur in many respects, having the distinctive white stockings, but has no frontal or dorsal ridge.

Its horns are more like those of the gayal, but it has not the dewlap of the latter, and it appears to be a much smaller and lighter built animal than either gaur or gayal.

The old bull is black with white stockings and a white patch on each buttock, the cows and young bulls being bright chestnut. There is a stuffed specimen in the British Museum which shows the difference very plainly. The only measurements the writer has been able to obtain are those of the horns.

Measurements

Authority	Length of horn	Girth of horn	Splay at tips	Widest span inside	Remarks
GAVÆUS SONDAICUS					
	ins.	ins.	ins.	ins.	
British Museum . . .	24¾	12¼	15¾	24¼	From Java, Rowland Ward, 'Horn Measurements'
Mr. H. B. Low, British Museum	21⅝	12¼	13½	19¼	From Borneo ,, ,,
Mr. J. Carr Saunders . .	21	12	..	..	,, ,,
Mr. H. B. Low, British Museum	20⅝	12¼	18⅜	22½	,, ,, Rowland Ward, 'Horn Measurements'
British Museum . . .	20	12	..	..	
Mr. H. B. Low, British Museum	19¼	11¼	10½	15¾	From Borneo, Rowland Ward, 'Horn Measurements'
,, ,, ,,	18¼	10⅞	14½	18⅝	,, ,, ,,
,, ,, ,,	18	12¼	13⅜	16⅝	,, ,, ,,

XX. YAK (*Poephagus grunniens*)

Native names: '*Donkh*,' '*Dhong*,' *Ladak*; '*Bunchowr*,' *Hindi*

Wild yak are said to be plentiful throughout Thibet, but at present the Tartars watch their frontier so jealously that it is almost impossible for Europeans to cross with any chance of obtaining sport; particularly as the sportsman's own Tartar attendants would be the first to endeavour to frustrate any ambitious schemes of exploration. It must be remembered that, not only would they be held responsible by the Leh authorities if anything happened to an Englishman, but, living on the frontier themselves, they naturally like to be on good

terms with their neighbours. The valley of Chang Chenmo, north of the Pangong Lake, and the ground between the Niti Pass and the Sutlej, are the only two easily accessible places where yak may be met with. Beyond Chang Chenmo there is said to be good ground on the Karakash, but to cross the Linzinthung plains would require special arrangements, and ponies would have to be taken instead of the ordinary tame yaks on account of the scarcity of grass. An old wild bull yak is a magnificent beast; he is nearly jet black, with a little grey about the muzzle and forehead. Though fifteen hands in height, his legs are short and sturdy. The long shaggy hair which droops from his body reaches down to his knees, and sometimes almost to the ground; and his huge swab of a tail rather adds to than detracts from his beauty. The white tails which are brought for sale are those of tame yaks; a wild bull's tail is such an unwieldy mass of hair that it is not at all the sort of thing to have flipping round one's head on a hot evening. Tame yaks have often a good deal of white about them. Wild yaks with white patches have occasionally been shot, but only cows as far as the writer can learn; wild bulls appear always to be black. The Tartars say that these mottled wild yaks are hybrids between the tame bulls, which are turned out to graze on the hills in the summer, and wild cows.

Captain Duff contributes the following interesting account of a successful stalk after yak:

I was out one day after a couple of Thibetan antelope, and not being able to get near them, was looking about to see if there was any game farther up the nullah. Right away up the head of the valley we saw a large herd of dhong, about twenty or more, with a lot of young ones, and even at that distance we could distinguish one much bigger than the rest. The next day, a heavy fall of snow prevented my going out; but on the third day, I started to try for them. It was a long walk to get anywhere near the herd, and of course, just as I was beginning to go a bit carefully, and take advantage of cover, I put up three very fair *Oves Ammon*, but the dhong did not seem to notice them, and the wind all through was in my favour. A bit farther on I came across one of those beastly

kyang, which would keep running on in front of me till I could get across the river at the bottom of the valley. When I got up to where I expected to find the dhong, I found they had moved a good bit higher up the nullah, and I could not possibly get nearer than some three hundred yards from them. Leaving my gun-carrier and a Tartar behind with strict orders not to stir till I fired, I tried to crawl on with my shikari, but had to return before getting any distance, the dhong meanwhile feeding farther away and going up the hillside, thus making the stalk more and more difficult. I had seen no signs of my big friend, and began to think I had been mistaken ; but there was a fair-sized bull with the herd. I now had to retrace my way for some distance, and get down to the river again, so as to creep up under cover of the bank till I got a hill between the dhong and myself. On reaching this hill, I found I could not possibly get within shot, and could do nothing but hide behind a large stone and wait.

I suppose I must have waited at least a couple of hours, when there was a bit of a commotion among the herd, the babies all running to the big ones, and I heard a funny noise which I could not account for. In a few minutes I saw the big bull appear from round the side of the hill, walk leisurely towards the herd, and lie down. Just then three chankos came past me, and I came to the conclusion that they had occasioned the scare, had been driven off by the big bull, and had made the noise I heard.

I waited for another good half-hour, and had almost made up my mind to crawl towards the bull in the hope that he would mistake me for one of the chankos coming back, and so give me a shot, when up he got, but only to walk a few yards, and then go down again and roll.

After a bit of this sort of play he got up again, and taking no notice of the rest of the herd, began walking towards me.

There was a little stream at the foot of the hill I was on, and the bull was walking quietly down the opposite bank, coming on slowly, looking like a young elephant with his hair nearly touching the ground on each side of him.

I waited and waited for him, till he got almost past me, and within about sixty or seventy yards, and then he stopped, looking down the nullah, and broadside on to me. I tried to get steady on him and fired ; but he stood still, and my shikari said I had missed. The ground beyond him was softish, and I began to be afraid I had, and had not seen the bullet strike, so I fired again, and the bull

Measurements

Authority	Height at shoulder	Length, head and body	Tail	Girth at shoulder	Girth at belly	Girth at neck (thinnest part)	Length, horns	Girth at base	Splay, tip to tip	Widest span inside	Remarks
						BOS GRUNNIENS					
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
Hume Collection, British Museum	..	..	..	..	..	..	38¼	17	19	31½	Rowland Ward, 'Horn Measurements'
Col. E. Smyth, Leeds Museum	72	130½	37	121	112	50	36	18	..	..	Gen. Macintyre, 'Hindu Koh'
Major FitzHerbert, Cambridge Museum	..	..	..	..	..	..	35	15	..	..	
Hume Collection, British Museum	..	..	..	..	..	..	34⅞	15	16	27¾	Rowland Ward, 'Horn Measurements'
Hon. W. Rothschild	..	..	..	..	..	..	34	12	20½	..	,, ,, ,,
British Museum	..	..	..	..	..	..	32⅜	13¾	16¼	26⅝	,, ,, ,,
Mr. H. C. V. Hunter	..	..	..	..	..	..	32	13⅞	15¼	22¼	,, ,, ,,
Major Ward	..	..	..	..	..	..	31½	..	..	..	'Sportsman's Guide to Ladak,' &c.'
,,	..	..	..	..	..	..	31	..	..	..	,, ,, ,,
,, (quotes one)	70	..	..	..	..	..	..	..	..	..	,, ,, ,,
,,	64	..	..	..	..	..	..	..	..	..	,, ,, ,,
,,	64	..	..	..	..	..	..	..	..	..	,, ,, ,,
Sir R. Harvey, Bart.	..	..	..	..	..	..	30¾	13½	10½	..	Rowland Ward, 'Horn Measurements'
Capt. Duff	61½	..	..	..	..	..					
Col. Kinloch	60 or more	..	..	..	..	..	about 36	about 14	..	..	'Large Game Shooting'
Jerdon's 'Mammalia'	66	..	..	..	..	..	30	15	..	..	
Major FitzHerbert	..	..	..	..	..	..	21	8	..	..	(A cow)
Average of good head	..	..	..	..	..	..	27	12	..	..	

dropped in his tracks. I found my first shot had hit him in the neck, and must have paralysed him, as he could not move his fore-legs, though he could kick with his hind ones. My second shot was a wild one, and had only broken a hind fetlock. The rest of the herd ran in all directions at the shot, and then getting together, made for the top of the valley. As soon as I saw that the big bull could not get away, I started after them, and managed to get two more bulls.

The big bull was really a very fine beast, his forehead covered with curly grey hair. He measured just over 15 hands 1¾ in. as he lay. I put a stick as upright as I could against his withers, and measured to his heel.

In 1866 another sportsman managed to evade the Tartars, and crossing the Sutlej beyond Niti, found a herd of eighty yak, out of which he shot a bull and three cows, one of the latter being piebald.

There is a quaint story from Nepal, that, during the war between the Nepalese and the Thibetans, Jung Bahadur, finding his army very short of food, referred the case to the chief priests in Khatmandu, who decided that yak were deer, and not cattle at all, as their tails were different, and so might safely be killed and eaten by the pious Nepalese.

XXI. BUFFALO (*Bubalus arni*)

Native names generally: 'Ban Bhains,' 'Arná' the male, 'Arni' the female; in Bengal, 'Mains'

The buffalo is found in Nepal, and extends eastward through Assam to Burmah. It is plentiful in the Sunderbuns, in the Central Provinces, and in Ceylon, but is not found, according to Sanderson, in Southern India. Forsyth gives 80° as the extreme western limit of buffaloes in Central India, and says that they are not found north of the Nerbudda river.

The wild buffalo only differs from the tame one in being slightly larger and more uniform in colour (tame ones are of many shades, and have often a good deal of white about them, in fact albinos are not uncommon), and in having regular white

stockings, which the tame ones may or may not have. The horns are more symmetrical and larger. In the high grass jungles of the Terai and Assam, buffaloes are generally shot off elephants, and Kinloch notices 'the strong sweet bovine scent' emitted by a herd. In the Sunderbuns and parts of Lower Bengal they are occasionally shot out of boats when the country is flooded. The sport is described as magnificent, but requires a fever-proof constitution.

In the Central Provinces, however, the ground is more open; there buffaloes can be stalked on foot, and Captain Forsyth gives an account of a sparkling episode when shooting buffaloes from horseback.

When pursuing them on foot, the best time for sport is in April and May, when a good deal of the grass has been burnt and water is comparatively scarce. The best way of finding the animals is to look for fresh tracks near pools of water, and follow them up. The plan recommended for bison, of sending the trackers on ahead, should be adopted if possible.

Captain Lamb gives the following interesting account of a stalk:

I started up the river bed and found fresh tracks. After following the track for a good way we came on a single bull feeding on a grassy plain about half a mile in width, studded with a few trees. Leaving all the men behind, I crept up on my stomach to within about forty yards of him, and got behind a small pollard tree without the bull being aware of my presence. I fired at his shoulder with the 12-bore, and he fell over kicking on his back. Just as I was going to give him another shot, a second and larger bull rushed out from the long grass and attacked number one, who was still kicking on the ground. He gave him a tremendous punishing, bowling him over whenever he attempted to rise. I was so astonished at the whole thing, that I simply stood and watched. After a little while, number two seemed to think there was something wrong, and stopped to look round; whereupon, I took the opportunity of giving him a shot, which laid him on his back like his fellow. Both bulls then got up and went into the long grass. I followed number one, going very cautiously, as I was not quite sure of number two's whereabouts. I came up with number one,

who was still on his legs, knocked him over again and finished him with a shot behind the ear. I then went after number two and killed him without any difficulty. The fight had been quite knocked out of him.

Buffaloes appear to charge much more readily when hunted with a line of elephants or from boats than when stalked on foot. In the first case at all events the buffalo is generally roused from his midday sleep, and attacked at close quarters, when his temper is ruffled, while when stalked on foot he gets such a severe wound when feeding (probably without seeing his

'He gave him a tremendous punishing'

enemy) that the fight is knocked out of him to start with. Still fatal instances have occurred, notably in the case of Mr. Chatterton, of the police, who was killed by a buffalo in 1886.

Kinloch gives an account of a bull charging elephants both before and after being wounded. When they have thoroughly made up their minds to fight, buffaloes will, as a rule, carry out their plans most resolutely; but wild ones, though in a less degree, have the same kind of slow-wittedness that is so remarkable in tame buffaloes. If a European rides past a herd of tame buffaloes in some rather out-of-the-way district

Measurements

Authority	Length, nose to root of tail	Tail	Girth of body	Girth of forearm	Height at shoulder	Length of horn	Girth of horn	Tip to tip across forehead	Splay at tips	Widest span inside	Sex	Remarks
						BUBALUS ARNI						
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.		
British Museum	..	..	..	..	..	78	17	..	..	..	Bull (?)	Pair of horns without skull
,,	..	..	..	..	..	$77\frac{3}{8}$	$17\frac{3}{4}$	..	..	..	Bull	(Single horn) Rowland Ward, 'Horn Measurements'
,,	..	..	..	..	..	R $65\frac{1}{2}$, L $68\frac{1}{4}$	$20\frac{1}{4}$	$146\frac{1}{4}$	93	..	,,	
Colonel J. Mathie, British Museum	..	..	..	..	..	$65\frac{3}{4}$	$20\frac{1}{4}$	..	..	..	..	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	..	..	$58\frac{5}{8}$	$12\frac{3}{4}$	..	..	..	Cow (?)	,, ,, ,,
Mrs. Hannaford	..	..	..	..	..	$58\frac{1}{2}$	$13\frac{1}{4}$	..	..	..	Cow	,, ,, ,,
British Museum	..	..	..	..	..	$58\frac{1}{2}$	$12\frac{3}{4}$	..	..	..	Cow (?)	,, ,, ,,
Bethnal Green Museum	..	..	..	..	..	$58\frac{1}{4}$	18	..	$42\frac{1}{4}$	..	Bull	,, ,, ,,
British Museum	..	..	..	..	..	$58\frac{1}{4}$	13	..	..	..	Cow	
Mr. J. D. Inverarity	..	..	..	..	..	57	..	..	..	..	Bull	,, ,, ,,
Mr. Eyre Coote	..	..	..	..	..	56	$15\frac{1}{2}$	..	$55\frac{1}{2}$	58	,,	,, ,, ,,
Mr. J. Carr Saunders	..	..	..	..	..	$55\frac{1}{2}$	$18\frac{1}{2}$	124	..	..	,,	
Hume Collection, British Museum	..	..	..	..	..	$54\frac{1}{2}$	$18\frac{5}{8}$	..	$38\frac{1}{4}$	$48\frac{5}{8}$	,,	,, ,, ,,
Mr. A. O. Hume	..	..	..	..	..	$53\frac{7}{8}$	12	..	..	..	Cow (?)	,, ,, ,,
Baron de Nolde	..	..	..	..	..	$53\frac{1}{4}$	21	..	$26\frac{7}{8}$	..	Bull	,, ,, ,,
Hume Collection, British Museum	..	..	..	..	..	$53\frac{1}{4}$	$12\frac{5}{8}$	..	$23\frac{1}{4}$	$40\frac{5}{8}$	Cow (?)	,, ,, ,,
Mr. B. H. Hodgson, British Museum	..	..	..	..	..	$53\frac{1}{2}$	$12\frac{1}{2}$	..	..	..	..	,, ,, ,,
British Museum	..	..	..	..	..	53	$12\frac{1}{2}$	..	..	..	..	,, ,, ,,
Hume Collection, British Museum	..	..	..	..	..	$52\frac{3}{4}$	$18\frac{1}{4}$	..	$30\frac{1}{2}$	$44\frac{1}{2}$	Bull	,, ,, ,,
British Museum	..	..	..	..	..	52	$16\frac{3}{4}$	..	..	..	,,	,, ,, ,,
Colonel Kinloch	115	47	99	20	60	..	..	99	..	..	,,	'Large Game Shooting'
,, ,,	..	..	..	..	..	..	..	122	..	..	Cow	,, ,,
,, ,,	..	..	..	..	..	..	..	151	..	..	Bull	Quoted ,, ,,
,, ,,	..	..	..	..	..	..	..	over 156	..	..	Cow	Quoted ,, ,,
Sterndale's 'Mammalia'	123	..	..	..	76	..	..	..	..	..	..	
Captain Lamb	..	..	..	..	64	48	..	..	..	..	Bull	
Average of good head	..	..	..	..	..	48	18	..	..	..	Bull	
,, ,,	..	..	..	..	..	50	12	..	..	..	Cow	

where Europeans are scarce, some of the herd are sure to begin pondering on the advisability of charging him, but before they can make up their minds, the object of their attentions has got beyond reach and they give up the problem. The average size of a good bull's horns is about 40 ins. in length by 16 ins. in girth, or about 8 ft., measuring from the tip of one horn round the curve across the forehead and up the other horn. It is somewhat unfortunate that sportsmen should have selected this style of measurement, as it gives a poor idea of the comparative size of horns.

Forsyth and Kinloch both agree that a front shot is rarely successful against buffaloes, owing to the angle at which their heads are carried and the enormous thickness of their chests. Forsyth recommends hardened bullets, as he found two-ounce bullets of soft lead propelled by eight drachms of powder flattened on their shoulders, pulverising the bone but not penetrating to the vital parts. Williamson describes shooting buffaloes out of boats in flood-time, and says that the point to aim at in this sport is to get the beast into such deep water that he cannot lower his head to use his horns.

As for using dogs for buffalo, Forsyth's experience with a wounded bull was not a happy one; he writes: 'The dogs were now loosed, and bayed round him till he began to chase them all round the field; but as soon as our heads appeared over the fringe of grass, he left them and charged down at ourselves.' In spite of one of the dogs pinning him by the nose, the bull made good his charge, knocking Forsyth's rifle out of his hand and upsetting his companion.

XXII. SAMBUR (*Rusa Aristotelis*)

Generally, 'Sambur' or 'Maha'; in Gurwhal, 'Jerow' or 'Barasingh'

The sambur is found throughout the lower slopes of the Himalayas from the eastern bank of the Sutlej river (Kinloch points out that the Sutlej seems to be its boundary), and extends all over India and Ceylon to the south, and through

Assam and Burmah as far as the Malay Peninsula to the south-east, wherever there are forest-clad hills. It does not ascend to any great elevation, being rarely found above an altitude of 5,000 or 6,000 ft. It seems to delight in heat, not, indeed, of the sun, as it is as careful of its complexion as a gooral, but of hot stony hills and stifling ravines covered with thick forest.

Sambur appear to require very little water, drinking, according to Sterndale, only every third day—a fact which the writer's experience entirely confirms.

The general colour of the stag is dark sepia, the chin and inside of limbs yellowish-white, and an orange-yellow patch on the buttocks. The dirty yellow patch on the chin is sometimes very striking, and looks as if the stag had the skin of a pale orange in his mouth. The tail is large, the hair being coarse and very dark brown ; and on the neck there is a shaggy coarse ruff. The ears are large and coarse, rounded in shape, nearly black, and almost hairless. Sterndale calls the sambur a noble creature, but compared with the Cashmere stag, red deer, or wapiti, he looks an ugly, coarse, underbred brute. The horns are massive, with a long brow antler and a bifurcated top, and in good specimens are about 40 ins. in length ; longer horns are obtained occasionally, but not often. As the sambur is almost entirely nocturnal in its habits, it is most commonly shot in drives, and in many places it is almost impossible to obtain sambur otherwise; but where it can be managed, stalking is, of course, far better fun. The sportsman should be on his ground just before daylight, and work slowly through the forest at the edge of the feeding grounds, taking the bottom of the hill if there are crops on the plain below, or, failing these, the edges of the open glades in the forest. Presently, if there are any sambur about, he will hear their trumpet-like call, and, creeping on, see two or three dark forms moving among the trees. In the grey of the morning it is often very hard to distinguish a stag from a hind, and the writer has on several occasions had to wait after viewing the

herd till there was light enough to pick his stag. Even in broad daylight it is difficult to judge the size of a stag's horns as he stands motionless in the deep gloom of the forest, and what little can be seen of them makes them look three times their real size—the beam is so massive and the tines so long. The stag, too, is such a big beast, standing nearly a hand taller than a barasingh, that if seen in the open he looks as big as an Irish elk.

If the sportsman fails to intercept any stags on their return from their feeding grounds by working along the base of the hill, he should next ascend the hill and try the cup-like basins which are so often found near the summits. Sambur are very fond of these spots, but a first-rate local shikari is necessary to show the way to them, as there is often no sign of the existence of such places from the foot of the hill, the trees appearing to grow taller in them on purpose to hide them from observation from below. The approach to them is often up a heartbreaking boulder-strewn slope, which apparently continues to the summit. Up this the sportsman toils, thinking his shikari must have lost his way, when suddenly he comes upon a dark cool glen, and in it there is pretty sure to be a herd. The above applies chiefly to the isolated hills which rise out of the plains in Central India; in ranges like the Sewaliks the best plan is to walk along the top of a ridge, examining the ravines below, and in the grass on the crest of these ridges will often be found places where sambur have been lying down under the trees, the form being carefully chosen so that the shade of the tree will be over it during the hottest part of the day. Many pleasant little incidents may occur during an early morning stroll in the Sewaliks; kakur, gooral, and chital afford tempting shots if the sportsman likes to vary his bag, and an occasional bear, leopard, or tiger may be met with. One sportsman met a tiger almost face to face just as he gained the crest of a ridge. The man only had a light single-barrel rifle, so he wisely refrained from attack under the circumstances, and, the tiger being a well-behaved deer-stalking beast, the two passed the

time of day and parted. Wild elephants, too, are not uncommon in certain parts, so that altogether there is always a chance of finding amusement. What fun there must have been in the Sewaliks in the days of the Ganesa mammoth and the four-horned moose-like sivatherium! Their remains in the British Museum make one's mouth water to think of them.

Among the larger ranges of hills in Southern India, the best way of hunting is to send men in pairs before daybreak to well-chosen positions to watch the forest, the sportsman with one attendant taking a line of his own, and working on or watching his particular beat till the sun is beginning to get powerful and the animals have lain down for the day; then he should himself go round the different groups of watchers and collect their reports. It is important that the sportsman should go round himself and not depute the work to his shikari, as a stag or a bear may often have been marked down to an inch by the watchers and may be stalked forthwith, whilst if a drive be decided upon the sportsman has an opportunity of studying the ground and settling all the details with his head shikari on the spot. Having gone round his sentries and withdrawn the men, he should then return to camp for breakfast, order beaters for any drives he has decided on, and about 11 A.M., when the sun is really hot and the animals marked down are likely to be disinclined to move, and so enable the beaters and guns to get into position, he should begin operations. All driving should be done in the heat of the day, when the animals are lying down; trying to drive when beasts are naturally on the move generally results in the game leaving the beat before the men are in their places. Another great point to attend to in driving is for the sportsman, if possible, to get up into a tree. It may sound ridiculous for a man to climb up a tree in a sambur drive, but he is far more likely to get an easy shot in this position, as the deer will neither see nor wind him, he commands more ground, and he runs no risk of heading back the wary old hind which often leads the herd; the chances being that if he is rightly posted the herd will come right

under his tree. Another advantage is that, his fire being plunging, he can shoot all round without danger to the beaters. If two or three guns are out, it is more than ever necessary to try to post them well up off the ground. Having settled himself in his tree, the sportsman should send his gun-carrier to some tree or rock at least a hundred yards behind him, so that the course taken by a wounded animal can be observed. Tracking in jungle is often very difficult work, and a sharp gun-carrier posted well to the rear will often save a lot of trouble. In some parts of the Himalayas native shikaris declare that they often shoot sambur by selecting a likely path and improvising a salt-lick, after the fashion of Laplanders when they want to catch their tame reindeer. General Macintyre describes the formation of a 'kar' and his adventures in watching one; he calls it a dirty way of killing 'jurrow.'

Though sambur occasionally throw out abnormal tines, they usually carry only three antlers on each horn—a long brow antler and two on top. The horns are generally shed about the end of March, and are free from velvet about the beginning of November. Major Ward's remarks about shooting small stags are well worth quoting :

> Remember that sambur are not prolific ; they seldom have more than one fawn, and that it is four years before the young stag assumes his complete shape of horn, and that he has still three or four years to live before he can have a pair of antlers worth preserving. He has quite sufficient chances against his attaining an age of seven or eight years, without having to run the risk of being shot down by the rifle bullet whilst still in his immature state.

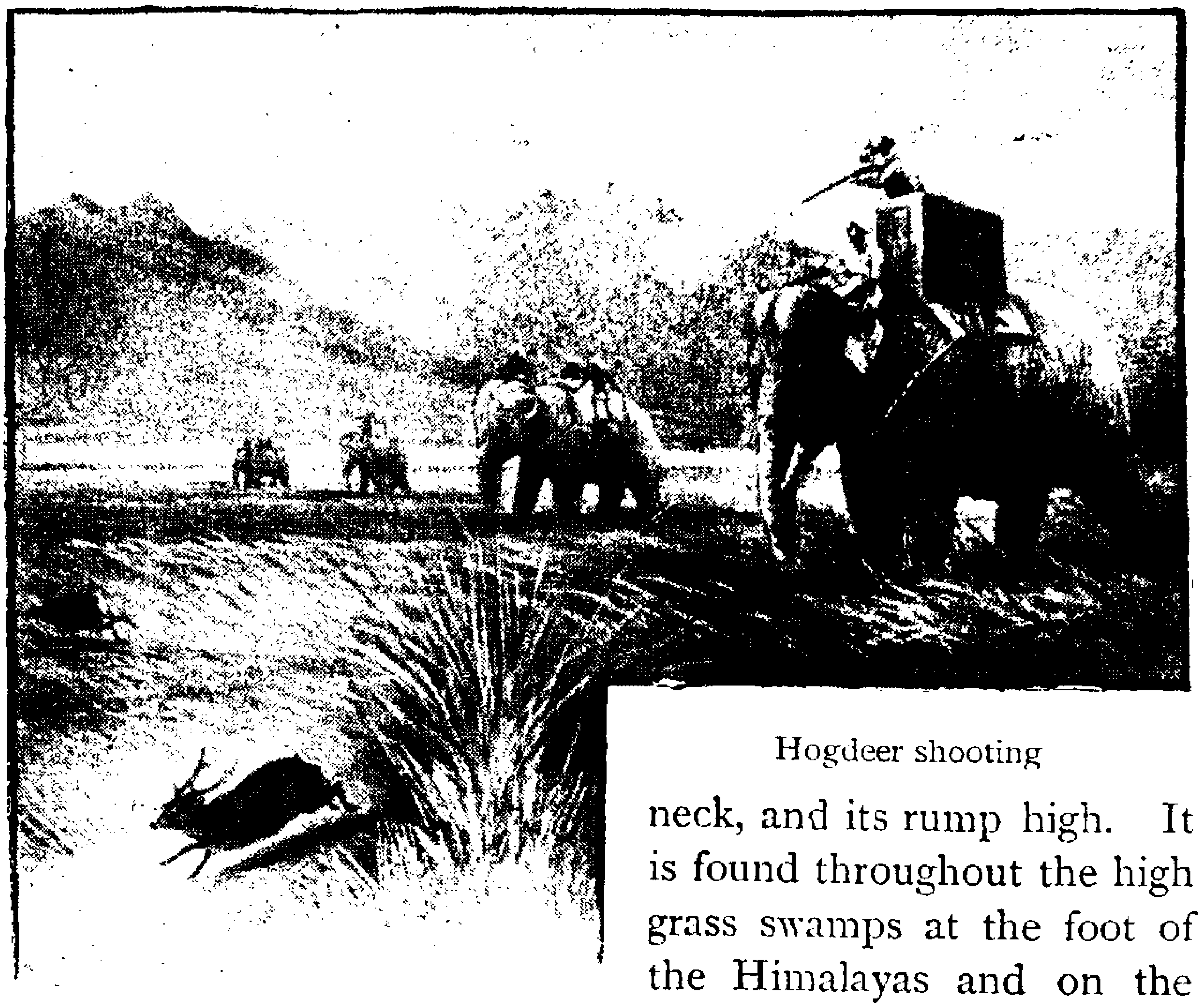
Shooting hinds is quite unpardonable, the venison being not worth eating.

XXIII. HOGDEER (*Axis porcinus*)

Native name : generally 'Para'

Kinloch aptly describes this deer as the rabbit of Indian battues. It is a long-bodied rather heavily built beast on short

legs with horns like a small sambur, the brow antlers coming straight up from the burr at an acute angle without the handsome curve of those of the spotted deer. The stags are reddish brown, their hair coarse and thick, their tails rather long and exactly of the sambur type, their ears round, not pointed like a spotted deer. When galloping through the grass the hogdeer carries its head low, its horns laid back on the



Hogdeer shooting

neck, and its rump high. It is found throughout the high grass swamps at the foot of the Himalayas and on the islands and banks of the big rivers. High grass and plenty of water are its chief requisites. It extends through Assam to Burmah, and is also found in Ceylon.

It is usually shot when beating the large tracts of grass in the Doon and Terai with a line of elephants, and affords pretty snap shooting from a howdah when better game is not expected. The does will squat in the grass till the elephants almost kick them up, but the way to get the best stags is to go well ahead

of the line on a flank, or, if possible, post yourself on foot so as to command a nullah leading from one patch of grass to another, or the dry sandy channel separating two islands. This, however, is a matter of some risk, as, if hogdeer are plentiful, the firing from the line becomes fast and furious, and unless you are on an elephant the guns in the line cannot see where you are. Shooting from a howdah is an art which requires practice, and many a good rifle-shot on foot finds himself missing hideously when he first tries shooting off an elephant. A very sound rule is, never to put your head down on the stock, but keep it well up, look hard at the beast's shoulder and see as much of its body as possible over the muzzle of the rifle: the range is generally short and nearly all misses go high. Shooting hogdeer from elephant has been likened, with some confusion of ideas, to shooting rabbits from a pitching collier in a gale of wind in the Bay of Biscay.

Hogdeer are often put up when pigsticking in grass, and give capital runs.

Major FitzHerbert had a quaint bit of sport in 1874. He slipped a brace of dogs at a stag and rode after them; in his own words:

> The stag made for the river, and as the ground got more and more open the bitch caught sight of him, made a rush and soon got up to him; she laid hold and pulled him over, but as the dog would not help her, the stag shook her off and went away again. When she came up to him again, he stood at bay with head down and bristles raised like a miniature red deer of Landseer's, but broke away when I came up. Once he charged the bitch and knocked her over: he stood at bay two or three times, but I never could get a spear into him for fear of hurting the dogs; at last one time as he was breaking bay I came up, and he charged me with such force as to break one of his horns clean off against the spear; however, I stuck him in the spine and rolled him over.

The fawns are always spotted. The stags seem very irregular in shedding their horns, and deformed heads are not uncommon.

XXIV. SPOTTED DEER (*Axis maculatus*)

Native names: 'Chital,' 'Chitra'; the Stag 'Jhank'

About the beauty of the skin of this beast, the writer heard a story of a man who was taking such particular pains to preserve the hide of a stag he had shot that his companion asked him what he wanted it for, adding, 'It's only a chital.' 'Yes,' returned the other, 'it may be only a chital on the banks of the Nerbudda, but I am going to send it home, and it will be a leopard at Northampton.'

The horns are of the rusine type, but the brow antler has a more graceful forward curve than in the sambur, and the anterior terminal point is always longer than the posterior. Small false points are also frequently thrown out at the base of the brow antler.

Chital are often shot off elephants, but the sport is not to be compared to stalking them; and as chital always seem to select the loveliest scenery in the forest for their abode, a morning or evening stroll after them is most enjoyable, or, if the heat is too great to render a long walk pleasant, a shot may often be obtained in the evening by watching a glade where the young grass is springing up after a forest fire. There must, however, be water in the vicinity, as chital are rarely found at any great distance from it.

The peculiar call of the chital can be heard for a long distance, and is a common hunting signal among many jungle tribes. If a chital is heard repeatedly calling in one spot, it is generally a danger signal, and means that a tiger or panther is on foot.

Unlike hogdeer, chital often go in large herds, each herd being owned by one big stag, though there may be many smaller stags in it.

The horns are shed annually but very irregularly, stags without horns, in the velvet, and with matured horns, being often met with in the same day. This is attributable to the

deer breeding all the year round instead of having a definite rutting season, the shedding of horns varying with the age of the stag. This is more noticeable in the forests along the foot of the Himalayas than in Central India, where, though still irregular, the bulk of the stags have their horns ripe in January and shed them about July.

Jerdon was of opinion that there were two species of spotted deer, the smaller of the two being found in Southern India; but Sterndale quotes McMaster to the effect that the spotted deer found in Orissa are more than usually large. As far as the writer has been able to judge, the stags in Central India have finer heads than those in the Doon and Terai.

When stalking in forest the sportsman should bear in mind that if he comes suddenly on game his best chance of avoiding detection is to stand motionless. If he attempts to crouch the movement will draw attention at once, whereas if he stands still, and his clothes are of the right colour, he may very likely be mistaken for the stump of a tree.

XXV. SWAMP DEER (*Rucervus Duvaucelli*)

Native names: 'Gōn,' 'Gond,' 'Barasingha,' 'Maha'; in Central India, 'Geen' or 'Goenjak' (male); 'Gaoni' (female) (Sterndale)

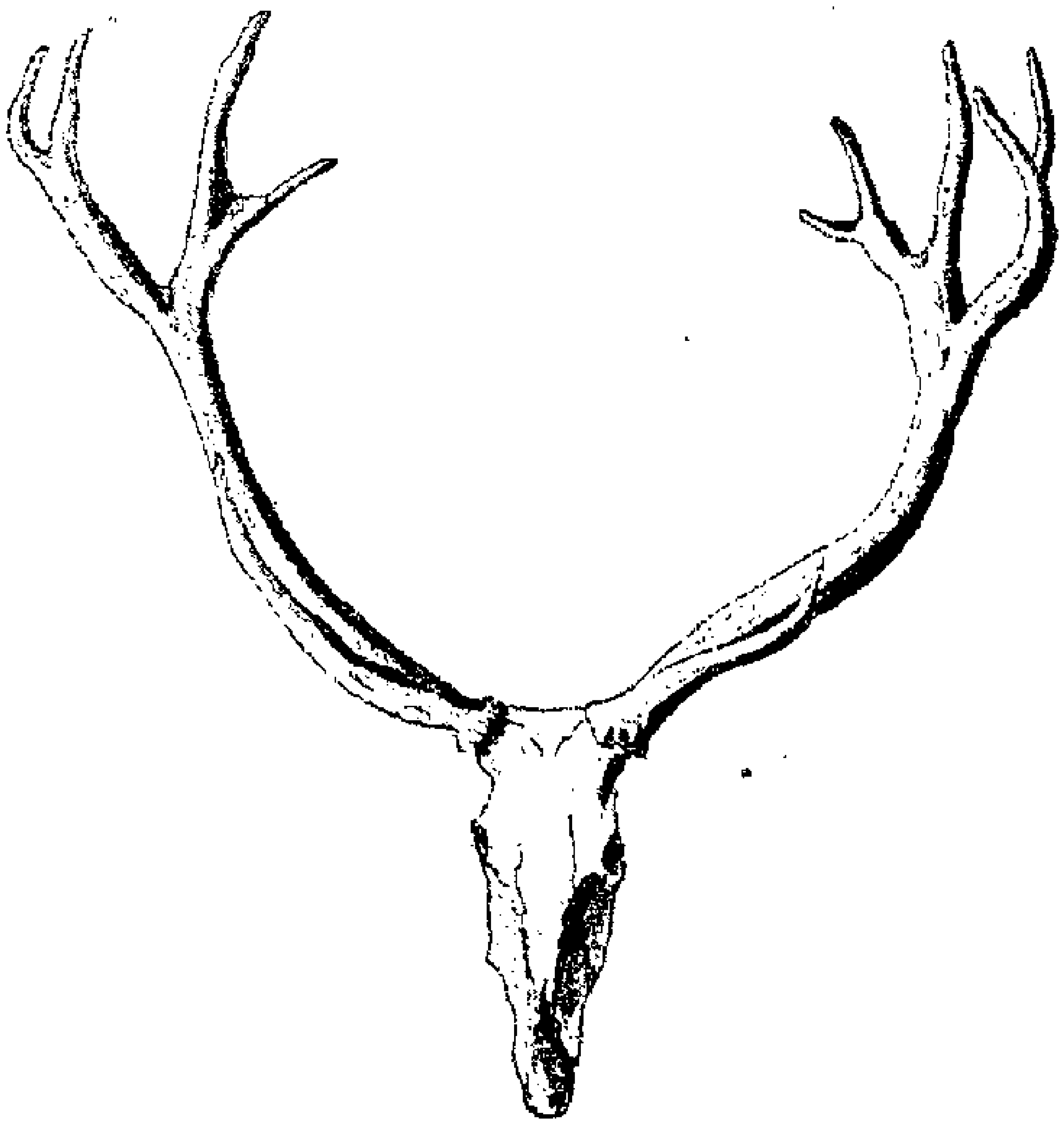
This deer avoids heavy forest and is nearly always found in the swamps and open grassy plains near rivers. Colonel Erskine, the Commissioner of Kumaon, writes of it:

> I have shot numbers of these deer, but all in the swampy Terai country in the north of Oudh bordering on Nepal, and in that part of the Pilibhit district on the same frontier. I have never heard of it much to the west of the Pilibhit district. I should think Haldwani, at the foot of the Naini Tal hill, was well beyond the western limit of the tracts which it frequents; it is found in the swamps and high grass on the edges of the swamps and rivers, and on the islands in the rivers, along the forest country at the foot of the Himalayas, from the places I have mentioned, eastwards as far as Assam and Bhotan, and along the Barhamputra

river down to the Sunderbands of Bengal. It is also known in the Central Provinces near Mundla and along the tributaries of the Nerbudda.

Kinloch says that it used to be found on the islands in the Indus, but is now almost extinct there. By all accounts it seems to prefer the neighbourhood of Sál forest.

The antlers of the swamp deer are peculiar. The beam is rather slender, the brow antler very long, there is no median tine, and at the top the head becomes almost palmated. The

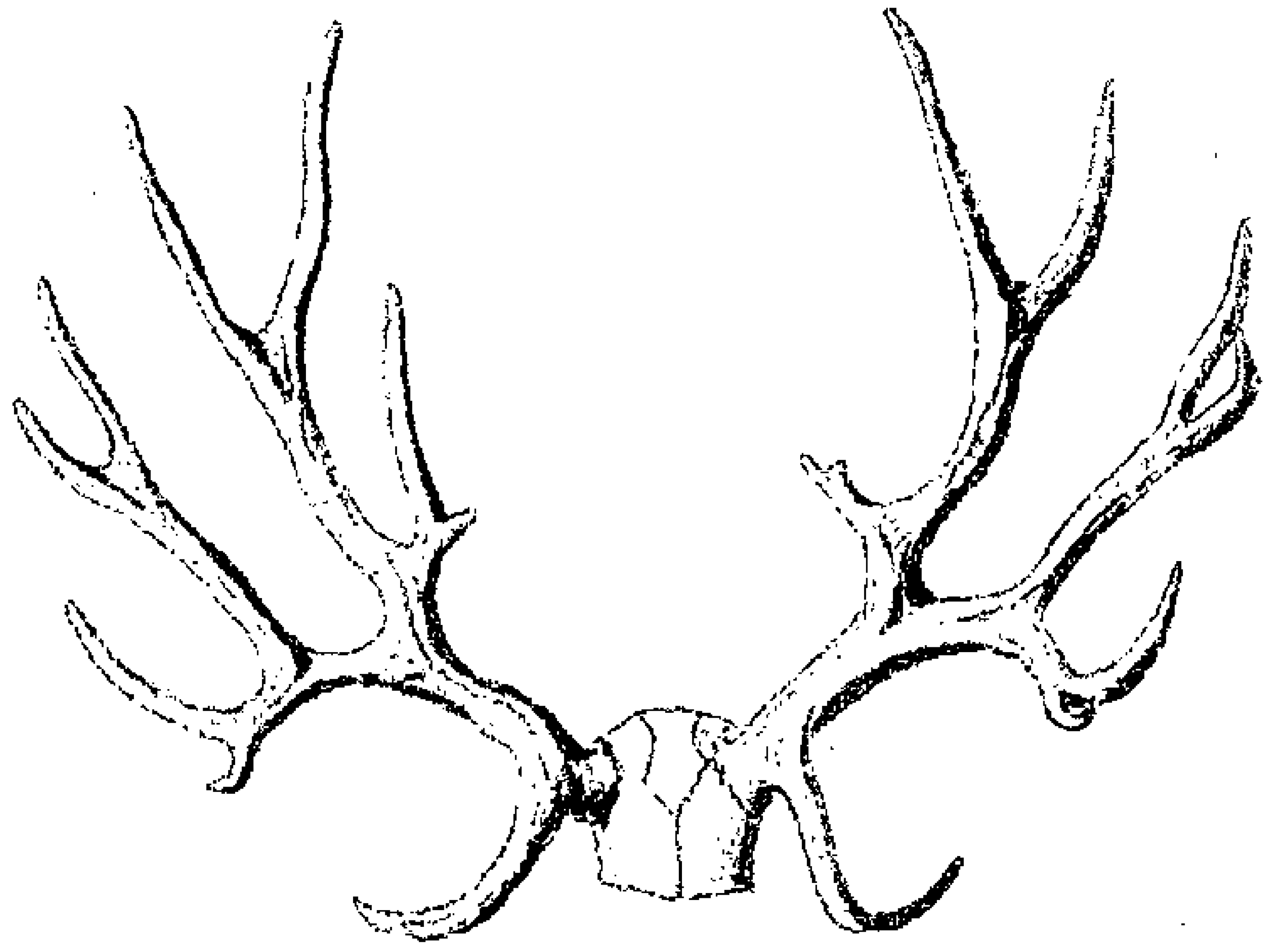


Rucervus Duvaucelli

full-grown stag carries three antlers on the top, two of which (the outside antlers generally) are bifurcated equally, as if the antler had been split and bent outwards; each horn having thus six points, including the brow antler. Colonel Erskine says that he has never seen a head with more than fourteen tines, but Jerdon speaks of seventeen. In Schomburgk's deer (an allied form found in Siam), all three prongs on the top are bifurcated. The difference between the two varieties is very noticeable in the British Museum, where the horns are placed

side by side. Sterndale says that in Schomburgk's deer the très and royal tines are equal, whilst in the swamp deer the très tine is longer than the royal.

In the high grass of the Terai and Assam, swamp deer are generally shot off elephants, but in some parts of Central India the ground is open enough to permit of their being stalked. Forsyth gives a capital account of the sport he enjoyed while hunting them in the Sál forests of Central India. Swamp deer are gregarious, and Jerdon quotes from an article in 'The Indian Sporting Review' a case of three large herds being seen on one



Rucervus Schomburgkii

plain. The general colour of the beast is a light yellowish red, paler in the winter than in the summer; the under parts and below the tail are white. The hinds are lighter coloured than the stags, and the fawns are spotted. The stags appear to shed their horns about March or April, as, Forsyth says, they lose the velvet at the close of the rainy season; he also says that they shed their horns more regularly than the *Rusinæ*. The following quotation from his charming book gives an excellent account of their habits:

This animal has been called in North-Eastern India the 'swamp deer,' but here (Central India) he is not observed to be particularly

partial to swampy ground. These deer graze in the mornings and evenings in the open valley, chiefly along the smaller streams, and by springs where the grass is green, and rest during the day about the skirts of the Sál forest. A favourite midday resort is in the shade of the clumps of Sál dotted about the open plain, at some distance from the heavy forest. They are not nearly so nocturnal in habits as the sámbar, being often found out grazing late in the forenoon, and again early in the afternoon; and I do not think they wander about all night like the sámbar. Their midday rest is usually of a few hours only, but during that time they conceal themselves in the grass much after the manner of the sámbar. I have never heard of their visiting cultivated tracts like the latter; nor can I learn that their apparent adherence to the Sál forest is due to their employing any part of that tree as food.

XXVI. BROW-ANTLERED OR ELD'S DEER

(*Rucervus* vel *Panolia Eldii*)

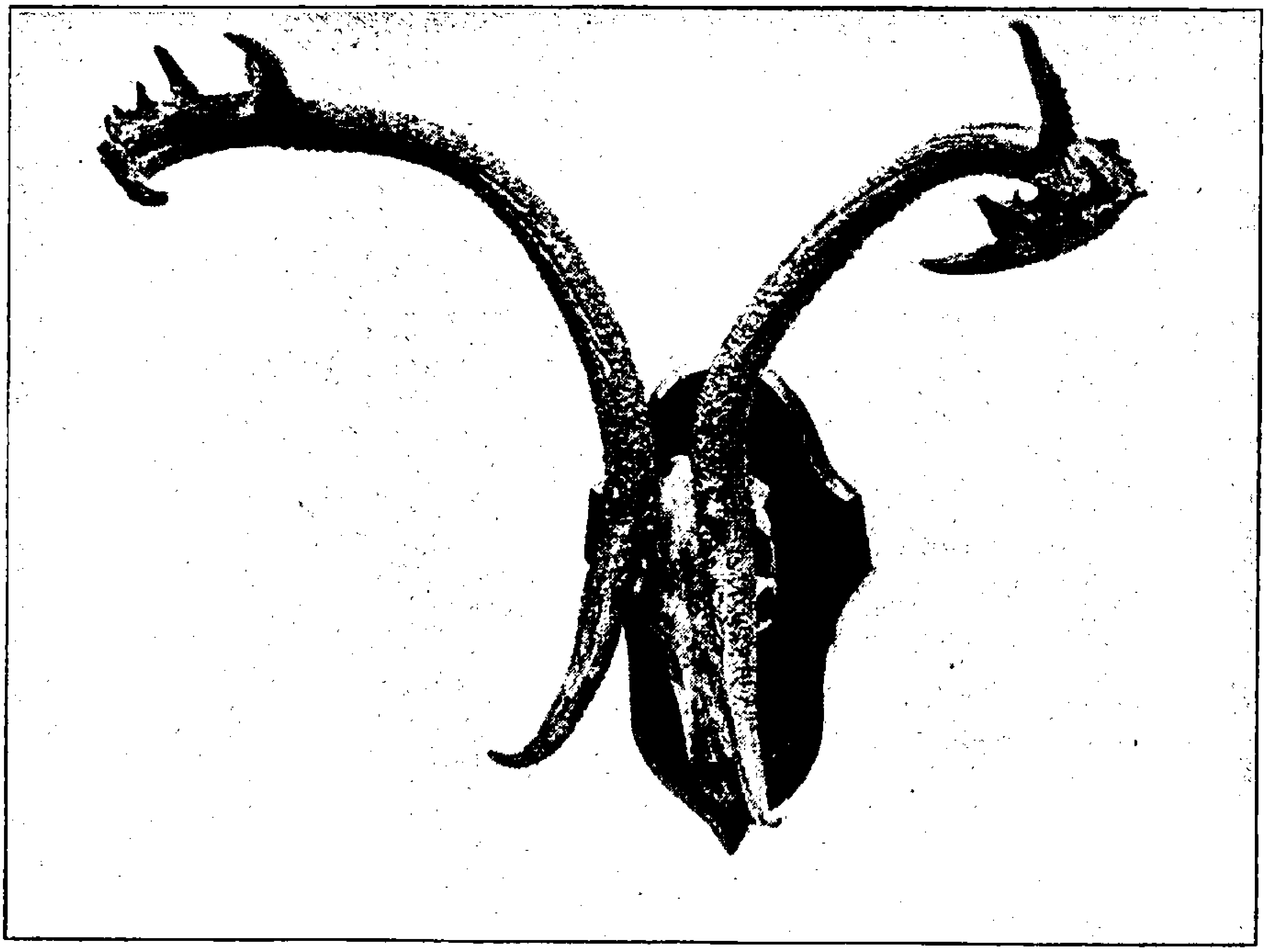
Native names: 'Thamin,' 'Sungrai'

This variety of swamp deer is found chiefly in Burmah, but extends from Munipur to the Malay Peninsula. Its habits are, as above noted, the same as those of the swamp deer, but it is rather differently coloured, being, according to Sterndale, 'of a light rufous brown with a few faint indications of white spots, the under parts and insides of the ears nearly white, the tail short and black above. It is said to become darker in winter instead of lighter, as in the swamp deer.'

The horns, however, are very unlike the swamp deer's. The brow antler and beam, instead of forming an angle, are in one continuous curve, like the section of a circle, the burr being small and hardly seen. In rear of the top of the beam there is a short snag, which Sterndale calls the royal tine, and on the front of the top of the beam, which is rather flattened, instead of regular tines like those on a swamp deer's head, there is a collection of what look like false points. In a head in the British Museum the left horn has thirteen of these little snags and the right fourteen.

In Upper Burmah, Eld's deer are scarce, and the only way

to obtain them is to drive for them with beaters. In Lower Burmah they are occasionally shot by lamplight, much in the same manner as that described in Colonel Rice's book ; the performance is said to be very interesting. The party (which usually consists of a lamp-bearer, a man with an arrangement of jingling bells and rings on a stick, the sportsman and his gun-carriers) having assembled after dark, a fire is lit, and a kind of



Panolia Eldii

incantation gone through, everyone but the speaker being forbidden to utter a word. When the incantation is over, each member of the party passes through the smoke of the fire in turn, the guns are handed through it also, the lamp is then lit, and the party starts, using the lamp, an earthenware pot with a hole in its side, as a search light, while the man with the frame of bells keeps up an incessant jingling On a deer being discovered, the light is at once turned full on its eyes and kept

Measurements

Rusa Aristotelis

Authority	Height at shoulder	Total length	Weight as shot	Length of horn	Length of brow antler	Girth above brow antler	Girth above burr	Girth of burr	Girth of beam midway	Remarks
	ins.	ins.	lbs.	ins.	ins.	ins.	ins.	ins.	ins.	
Mr. A. O. Hume	..	..	..	46½	..	6⅝	..	..	..	Rowland Ward, 'Horn Measurements'
Dr. Falconer, British Museum	..	..	..	45⅛	..	6⅜	..	..	..	” ” ”
'The Field,' Dec. 22, 1866	..	..	..	45, 44	..	..	..	11	7½	Weight of horns, without skull, 20 lbs.
Sir J. Morris, K.C.S.I.	..	..	..	45	..	7¾	..	..	..	Rowland Ward, 'Horn Measurements'
Maj.-Gen. A. Ellis, C.S.I.	..	..	..	45	..	7¼	..	..	..	” ” ”
Sterndale's 'Mammalia'	..	..	..	45, 43	18¼	..	9	..	7¼	Has an abnormal snag 9 ins. long on right horn below the trés tine
” ”	56	72 to 78	..	..	..	..	..	..	..	
British Museum	..	..	..	44½	..	7	..	..	..	
Col. W. J. Morris	..	..	..	44½	..	7⅝	..	..	..	Rowland Ward, 'Horn Measurements'
Major Ward	53	..	..	44	..	9	..	..	..	'Sportsman's Guide to Ladak, &c.'
Mr. J. D. Inverarity	..	..	..	44	..	..	..	..	..	Rowland Ward, 'Horn Measurements'
The Earl of Ducie	..	..	..	R. 35, L. 33	R. 14½, L. 13	7½	..	..	..	A peculiar head with abnormal snags at the back of each beam. Terminal points: R. 11, L. 12½. Abnormal snags: R. 9¼, L. 13. Girth of snags: R. 5½, L. 7½.
The Maharajah of Kooch Behar, Letter to 'The Asian'	..	..	717	..	..	..	..	..	..	
C.A.S.W., 'The Field,' Oct. 25, 1890	44	..	561	..	..	..	..	..	..	
Sir S. Baker, 'Wild Beasts and their Ways'	54	..	about 600	..	..	..	..	..	..	
Average of good head	..	..	..	38	..	7	..	..	..	

AXIS PORCINUS

Major Ward quotes a head	..	..	..	21	..	..	..	..	..	
Mr. A. O. Hume	..	..	..	19¾	..	..	..	..	..	'Sportsman's Guide to Ladak, &c.'
Sir V. Brooke	..	..	..	19½	..	3¼	..	..	..	Rowland Ward, 'Horn Measurements'
Mr. H. C. V. Hunter	..	..	..	19½	..	3½	..	..	..	
Major FitzHerbert	27	49	96	..	..	3¾	..	..	..	" " "
"	..	..	96	16¾	..	..	..	..	..	" " "
"	25¾	..	98	..	..	..	..	..	..	
"	25½	51	93	..	..	..	..	..	..	
"	25	52½	96	12	..	..	..	..	..	
Major Greenaway	28	..	..	..	..	..	..	..	..	
"	24½	..	..	..	..	..	..	..	..	
Sterndale's 'Mammalia'	27 to 28	50 to 52	..	15 to 16	..	..	..	..	..	
Average of good head	..	..	..	16	..	..	..	..	..	

AXIS MACULATUS

Forsyth, 'Highlands of Central India'	..	..	..	38	..	..	..	..	..	
Mr. A. O. Hume	..	..	..	..	..	..	..	..	..	
"	..	..	..	37½	..	4½	..	..	..	Rowland Ward, 'Horn Measurements'
Sir V. Brooke	..	..	..	37¾	..	4	..	..	..	" " "
Gen. Macintyre	..	..	..	37¼	..	4¼	..	..	..	'Hindu Koh.' " "
Mr. W. C. Oswell	..	..	..	37	..	4	..	..	..	Rowland Ward, 'Horn-Measurements'
Mr. C. H. Seeley	..	..	..	36¾	..	4¾	..	..	..	" " "
British Museum	..	..	..	36½	..	4½	..	..	..	" " "
Capt. V. Couper	..	..	..	36	..	4¼	..	..	..	
Major FitzHerbert	..	..	..	36	..	..	..	..	..	
" (a hind)	35¾	70½	..	32½	..	..	..	..	..	
Major Greenaway	28	58	86	..	..	..	..	..	..	
	37	..	..	..	..	..	..	..	..	
Sterndale's 'Mammalia'	36 to 38	54 to 60	..	Average 30	..	..	..	..	..	
Average of good head	..	..	..	30	..	4	..	..	..	

Measurements (continued)

Authority	Height at shoulder	Total length	Weight as shot	Length of horns	Girth above brow antler	Length of brow antler	Span between tips	Points	Remarks
				RUCERVUS DUVAUCELLI					
	ins.	ins.	lbs.	ins.	ins.	ins.	ins.		
Major C. S. Cumberland	..	..	..	41	5½	..	..	6×6	Rowland Ward, 'Horn Measurements'
,, ,,	..	..	..	39¼	5	..	..	5×6	,, ,, ,,
Sir E. G. Loder, Bart.	..	..	..	37⅜	5¼	..	..	7×6	,, ,, ,,
Col. Erskine	about 45	..	..	37	7	14	..	7×7	
Major Ward	..	..	..	36½	5	..	..	..	'Sportsman's Guide to Ladak, &c.'
Mr. B. Hodgson	..	..	..	36	5	..	..	6×5	Rowland Ward, 'Horn Measurements'
Sir V. Brooke	..	..	..	35¾	4⅞	..	..	..	,, ,, ,,
Mr. H. C. V. Hunter	..	..	..	35¼	5¾	..	..	7×6	,, ,, ,,
Major C. S. Cumberland	..	..	..	34¾	5⅝	..	..	5×5	,, ,, ,,
British Museum	..	..	..	34	5½	..	..	5×5	Head No. 694 A.
Major C. S. Cumberland	..	..	..	33½	4¾	..	..	5×5	Rowland Ward, 'Horn Measurements'
,, ,,	..	..	..	33⅛	5½	..	..	5×5	,, ,, ,,
Rowland Ward	..	..	about 560	..	..	..	..	..	,, ,, ,,
Forsyth	..	..	..	33½	..	..	..	6×6	'Highlands of Central India'
Major FitzHerbert	49	82	..	30	..	10¾	..	..	
,, ,,	47	81	..	..	..	..	..	..	
Sterndale's 'Mammalia'	44 to 46	..	..	about 36	..	..	..	12 to 14	
Average of good head	..	..	..	30	5	..	..	6×6	

RUCERVUS SCHOMBURGKII

British Museum	..	..	..	$30\frac{1}{4}$	5	..	..	10 × 10	Rowland Ward, 'Horn Measurements'
"	..	..	..	$29\frac{3}{4}$	$5\frac{1}{4}$	..	..	9 × 8	" " "
"	..	..	..	$29\frac{7}{8}$	$4\frac{3}{4}$	..	..	10 × 11	" " "
"	..	..	..	$28\frac{3}{4}$	$5\frac{1}{2}$	..	..	8 × 8	Head No. 1463 A
Sir V. Brooke	..	..	..	$28\frac{1}{2}$	$5\frac{1}{4}$	..	..	11 × 9	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	$27\frac{7}{8}$	$5\frac{3}{8}$	..	..	9 × 8	" " "
"	..	..	..	$27\frac{3}{4}$	$4\frac{3}{8}$	..	..	7 × 8	" " "

PANOLIA ELDII

Sir E. G. Loder, Bart.	..	..	..	$39\frac{5}{8}$	5	..	..	20	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	$38\frac{7}{8}$	$6\frac{1}{4}$	..	..	16 × 19	" " "
"	..	..	..	$37\frac{1}{2}$	$5\frac{3}{8}$	..	..	5 × 5	" " "
Rowland Ward	..	..	..	37	$6\frac{1}{8}$	$10\frac{1}{2}$	..	..	" " "
Mr. A. O. Hume	..	..	..	$36\frac{1}{8}$	$5\frac{1}{2}$	..	..	4 × 3	" " "
British Museum	..	..	..	$35\frac{3}{4}$	$5\frac{3}{8}$	..	..	4 × 5	" " "
Hume Collection, British Museum	..	..	..	$34\frac{7}{8}$	$5\frac{1}{2}$	..	..	6 × 6	" " "
Mr. A. O. Hume	..	..	..	$34\frac{5}{8}$	$6\frac{1}{8}$	..	..	5 × 6	" " "
Hon. W. Rothschild	..	..	..	$34\frac{1}{8}$	5	..	..	6 × 6	" " "
Mr. J. Carr Saunders	..	..	..	34	$5\frac{7}{8}$	..	..	10 × 10	" " "

steadily there, the jingling kept going, with the result that the deer is so dazed that it will often allow the party to go close up to it before the sportsman fires. Both Eld's deer and sambur may be shot in this way, and the writer has been told that hares, and occasionally deer, will allow themselves to be approached till they can be speared or knocked on the head with sticks. This, of course, is not a very high class of sport, but in many of the coast districts stalking in the jungles is almost impossible.

The horns of Eld's deer are very difficult to measure in the ordinary way, owing to the extreme smallness of the burr, the back of the beam in good specimens touching the skull, and because the brow antler does not form an angle with the beam, but is simply a prolongation of the curve of the horn.

XXVII. THE CASHMERE STAG (*Cervus cashmirianus*)—STERNDALE, KINLOCH. (*Cervus Wallichii*)—JERDON, WARD

Cashmere: Hangal, Barasingh

This is the stag *par excellence* of India. A sambur has a fine head and so has a swamp deer, but neither approaches in beauty to a barasingh. A good stag's head is one of the trophies of the Himalayas, but unfortunately it is getting scarcer year by year. Sheep and cattle affect this deer but little, as they keep more or less to the open downs and glades; but the yearly increasing herds of buffaloes that come up from the plains to graze in Cashmere during the summer, at the very time that the stags are growing their horns, are the real mischief-makers. Buffaloes delight in plunging through dense forest, and they and their attendants will clear the deer out of any valley. Unfortunately for the sportsman, buffaloes pay for their feeding in taxes and produce, while deer do not. The best step as regards preservation that the Cashmere authorities have taken as yet is the creation of a Royal Preserve between the Sindh and Liddur rivers, and if they would only exclude buffaloes from this tract entirely it would form a real sanctuary, which would immensely

improve the shooting all round. At present, by allowing buffaloes to graze on it, they are depriving it of half its value.

In spite of all drawbacks stags are still to be got, but in no quantity. Two good heads in a month's shooting are as many as any sportsman can reasonably hope to get, and if one of those measures 40 ins., whether with ten or twelve tines, he is to be congratulated.

The general impression about barasingh seems to be that a full-grown stag always has twelve points, but this the writer believes to be entirely erroneous. I have hunted over some of the best ground in Cashmere on different occasions, and am of opinion that the number of points usually found in full-grown heads depends entirely upon the locality. The stags which do not leave the Cashmere Valley, i.e. harbour on the hills overlooking it, and those that live to the south-east, often run to twelve and sometimes more points; while the stags which harbour across the Kishengunga rarely run to more than ten points. These stags appear to develop ten points very early; the poorest head the writer ever shot was a 10-pointer. I shot a young stag with only six points once, under circumstances that gave no opportunity of previously judging its head, and it had far longer and better horns than the above-mentioned 10-pointer. Crummle and antelope heads are also rare. I once shot a very heavy old stag with a most curious antelope head, the horns having not a tine on them, and being twisted more like a markhor's than a stag's. The old fellow was absolute king of the valley, too, and not another stag dared answer his challenge. It was very puzzling at the time. While stalking another stag which had called once among some thick bushes but would not show, the old antelope head appeared far up the hill, sauntering leisurely down, and challenging as he came. Every deer within hearing seemed to hide from him at once. There was a small 6-point stag with a hind cowering behind some bushes about two hundred yards to my right, while the deer that he had originally started after were keeping hidden somewhere to his left, and the old chief-

tain was coming straight towards him, singing his war-song. Over and over again were the glasses laid on him, but nothing could be made out. The body was that of a royal, but the horns were short, with no antlers visible. Apparently he was a bad three-year-old. What did it mean? If he were a big royal the respect shown him by the other stags was intelligible enough; but why should they be afraid of a beast like that? Fairly puzzled, I crept back to look for the stag I had originally come down after, which there was every reason to believe was a 10-pointer. Not a sign of him could be seen, but while pottering about in some long grass a pair of straight horns suddenly appeared within forty yards of me. Confound this brocket! he has walked on top of me; perhaps he may just miss me! No! he comes straight on and looks me in the face. Now the brute will drive everything away, so here goes —and he drops in his tracks. A brocket? Not a bit of it; twenty years old if he's a day, and his quaint old head is the pick of the bag.

The general colour of barasingh is much the same as that of red deer, but is rather greyer, and the white patch on the rump appears a little larger. Sterndale says it has a white circle round the eyes, but the writer has never seen anything more distinct of this kind than a ring slightly paler than the rest of the head.

The horns resemble those of the red deer, with the notable exception that with barasingh the bez antler appears to be the fighting one, and is always longer and bigger than the brow antler, while with red deer the reverse is the case. Sir Victor Brooke says its call is just like that of a wapiti, and quite different from that of a red stag. 'In the former it is a loud squeal, ending in a more guttural tone; in the latter it is a distinct roar, resembling that of a panther.' According to the writer's experience, the full call is seldom heard till the rutting season is at its height. When the stags first begin roaring the call is comparatively short. Ward's remarks on the subject are well worth quoting: 'The noise a stag *can* make when

"roaring" is much louder than would be imagined, and can be heard at a great distance; but very often, when the animal is lying down, he only utters a prolonged moaning sound, which is very deceptive, and unless frequently repeated, it is difficult to find out the exact direction to follow.'

In the winter nearly all the barasingh are congregated in the Cashmere Valley, but though the smaller stags come down and are pretty easily found, the big ones will not leave the high ground, where it is impossible to follow them (unless they are driven down by an early fall of snow), until the young grass begins to grow in March, which is the best month to get heads, though of course the deer are then in poor condition. Ward writes about winter shooting:

> If it could be done, the plan would be not to decide to enter the valley (i.e. Cashmere) until information of a really heavy fall in December or early in January had been obtained. The late falls of snow do not drive the deer down. The hazel buds are swelling, and they can graze on them; the sap is rising in various bushes and trees, and the deer can eat the smaller twigs, but an early fall forces the animals into the valleys. . . . In the spring, when the snow is melting, is, to my idea, far the best time, and I would sooner have from February 20 to March 20 after the stags than all the rest of the year. They are then down on the young green grass, and are busily devouring the crocuses.

By the end of March all the big stags and most of the smaller ones have shed their horns, and the deer collect into large herds and begin moving off to their summer quarters, those in the western corner of the valley going to the banks of the Kishengunga river. The herds which strike the river at its nearest point below Gurais cross it, and retire to the range of hills on the southern border of Astor. Only a very few stags cross this range, the bulk of the deer remaining on the Cashmere side. The deer on the northern and eastern sides of the valley retire to the slopes of Haramook and the high ground south of the range which separates Cashmere from Dras and Sooroo, but do not appear to cross it. The farther east one goes from Srinugger the less the deer appear to migrate, merely

retiring to the heads of the valleys. The altitude of the birch copses just above the limit of the pines is what they seek, and this they can find close at hand on the north and east of the valley, but they have to travel some distance to it on the west. About September 1 the horns should be nearly free from velvet, and as a delicious wild black currant ripens at the same time, the shikaris associate the two. Up to September 20 the old stags are either alone or accompanied by a youngster who acts as fag, and they are not easy to find; in fact, as a rule, shikaris declare that it is useless trying to find them. But when the sportsman knows, from seeing tracks, that there are big stags on the ground, and the heads of the valleys (not the calling grounds) are the places to look for them, then, by carefully watching some glen where tracks have been seen, particularly just about 8 A.M. when the sun is getting hot, a stag may often be discovered as he rises from where he had lain down shortly after sunrise. He is about to move to a more sheltered spot to spend the day—and it is *so* satisfactory to have a stag or two to one's credit before they begin to call. Unfortunately it is not always possible. Some of the best valleys during the calling season do not hold stags before that season begins, as the deer move on to them just then, and very often leave immediately afterwards. Good local information is absolutely necessary, and a shikari who does not know every soiling pool, every deer-path, or likely copse for a stag to lie up in is useless.

The calling season generally begins about September 20, and varies according to the weather, and also according to the moon. Fine hot weather and a full moon about the 20th mean that every stag in the place will be calling freely. Wet cold weather and no moon mean the reverse, the weather having more effect than the moon. The idea of the stage of the moon having any effect may be considered fanciful, but if it is taken into consideration that the stags usually begin calling at night and almost invariably fight their battles for supremacy then, it follows that the light of the moon is a decided advantage. A good set-to between two old barasingh stags would be

'A SNAP-SHOT IN THE FOREST'

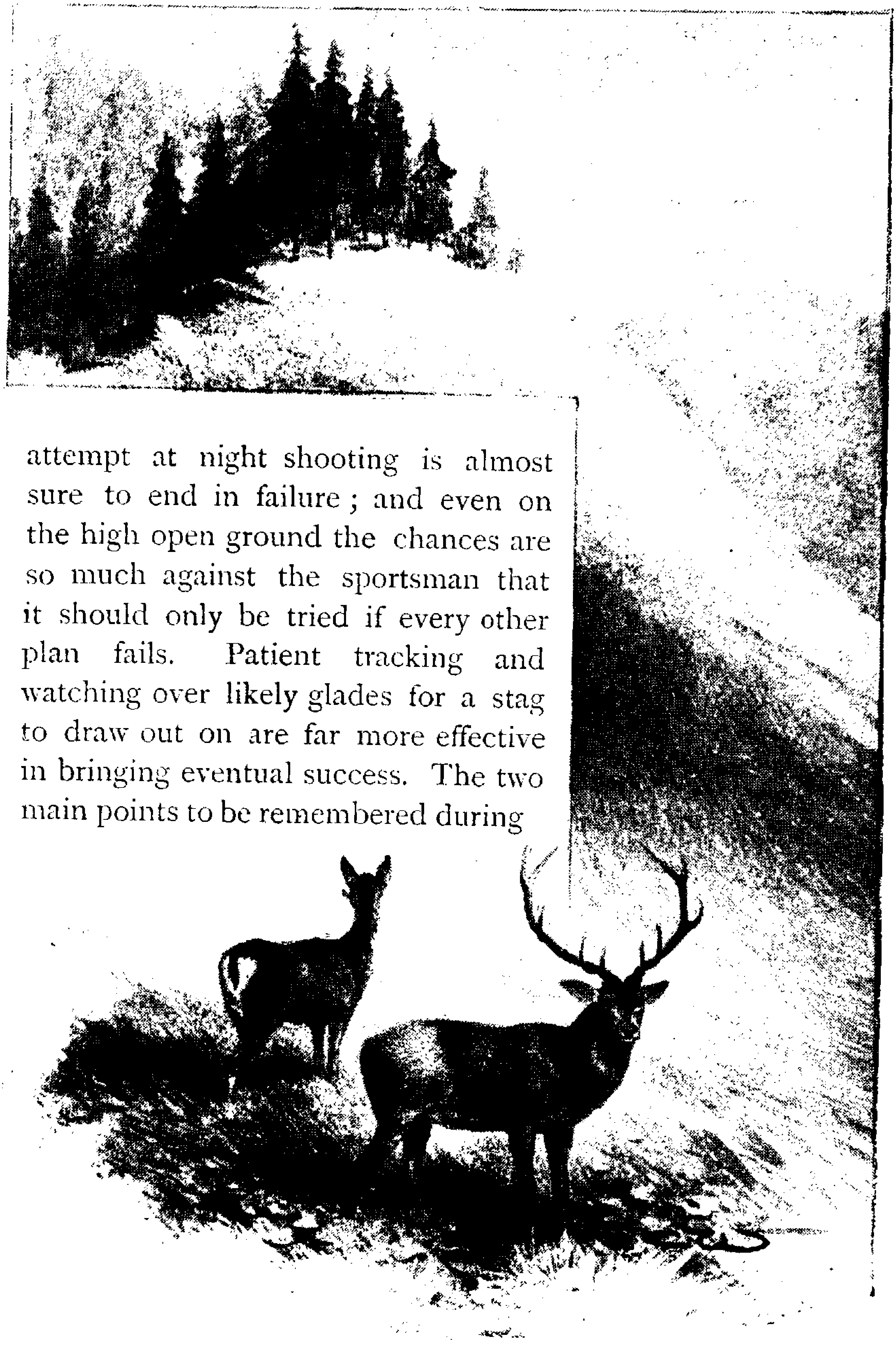
a grand sight. The writer once came across a battle-field, but too late to witness the fight, and the way the turf was ploughed up bore testimony to the severity of the struggle. The rutting season appears to be initiated by the hinds; at least I have observed that the short bark of the hinds is usually heard some days before the roar of the stags, and have seen a stag come best pace out of the forest in answer to a hind's call in the early morning, before a stag's challenge had been heard on the ground. It is most amusing to watch a young stag calling, the way he swaggers before his lady-love, tearing up the turf with feet and horns as if nothing could drive him from her, till his challenge is answered by a deeper note, when the youngster curls up at once, flees for his life to the thickest scrub he can find half a mile away and cowers among the bushes, while his mate in the most matter-of-fact way at once attaches herself to his lordly rival, who comes swaggering easily along the hillside with the sunbeams glancing from the burnished points of his glorious antlers. A small calling stag should never be disturbed, as he almost invariably draws out a better beast. Great care, too, should be taken not to frighten away unattached hinds anywhere near a calling ground. If left alone they will sooner or later be joined by stags, though occasionally hinds will run from a stag just as if they had scented a man. The writer on one occasion was watching a hind and calf feeding, when they suddenly galloped off, and presently an old stag came trotting down the hill grunting his displeasure and following their scent like a hound, till, coming within range, he paid the penalty. Probably owing to the scarcity of hinds, even the best stags appear never to be able to collect more than two or three, not counting calves, which seem always to run with their dams for a year.

Old writers talk of stags calling all day long. This may have been so years ago; now-a-days they rarely call after 9 A.M., and do not begin again before 3 P.M. at the earliest. I once heard a grand chorus in the early morning. Five different stags were calling at the same time, but as they

seemed to be more or less afraid of one another and kept perpetually on the move, I never got a chance at one of them.

To be successful with stags during the calling season, the sportsman should be on his ground as soon as it is light. The stags are moving about all night, and soon after sunrise they retire into the forest, where, unless they keep on calling, it is almost impossible to find them. This, of course, refers to the open ground at the top of the hills. Ward prefers the lower ground in the pine forest, from 8,000 to 9,000 ft. above the sea level, as he says the stags there seem to settle down into certain spots and remain there for days together. The writer's own experience is that the upper ground is best when the stags first begin calling, as they all seem to collect there, and that later on, about October 1, when there has often been a slight snowfall on the top of the hills, and the frost at night is beginning to tell, the stags should be followed down into the forest. But as different valleys vary so much, according to whether the deer remain in them during the winter or are merely passing through, no general rule applies to all. Hunting the upper ground as long as the stags are on it is undoubtedly far pleasanter than creeping about in the forest down below, and in the gloom of the pines the chances are very much against the stalker. Stags may occasionally be shot by waiting for them at some favourite soiling or drinking pool, and it is by no means a bad thing to try if the pool is in thick forest and some distance from other water. The most likely time to see anything is about 4 P.M., when the deer begin to draw out. Waiting over salt-licks and water at night is an abomination, like all other night shooting. As a rule, you do more harm than good by disturbing the ground, and if you do get a shot and hit (no certain matter even in the brightest moonlight), unless the stag is dropped on the spot you run a very great risk of losing him. Barasingh are very tough beasts, and an ill-placed bullet is not much use. It is very difficult to know what to do when (as often happens) the stags will not call till just before dark. If this happens among the pine forests, any

attempt at night shooting is almost sure to end in failure; and even on the high open ground the chances are so much against the sportsman that it should only be tried if every other plan fails. Patient tracking and watching over likely glades for a stag to draw out on are far more effective in bringing eventual success. The two main points to be remembered during



A stalk in the open

a stalk are, first, to try and get a clear chance at about sixty yards, and not creep up too close to the stag before firing; secondly, to avoid going straight downhill on to a stag. A stone dislodged, a pheasant or musk deer disturbed, will be sure to start him off. On the other hand, if the stalker is moving down sixty or seventy yards to one side, any slight contretemps does not necessarily spoil his chance of a shot. Every native shikari, if conducting a stalk, will try to land his master between the beast's horns if possible. As soon as he sees a stag, he will begin to try to point him out, with the result that before his master can get his wind and take any aim to speak of, the beast is at full gallop down the hill. The second point never enters into a native's calculations at all. Ward says that natives can imitate the call, and draw stags, but systematic calling as practised in the Tyrol is practically unknown in Cashmere, and a proficient in the art would undoubtedly have success. The point to aim at in calling is to pitch your note a little weaker than the answering stag, so as to give him confidence in accepting the challenge.

The stags generally cease calling towards the end of October (Ward says 20th), and after that there is little chance of getting sport till the snow drives them down, or, failing an early fall, till the spring.

Major Ward says a well-shaped 10-point head of 40 ins. should not be despised, but the majority of heads shot, according to the writer's experience, do not average more than 37 ins.; 40 ins. and over being exceptional heads.

XXVIII. THE SIKKIM STAG (*Cervus affinis* vel *Wallichi*)

Native name: 'Shou.' Habitat: Eastern Himalayas; Thibet, in the Choombi Valley, on the Sikkim side of Thibet (Sterndale)

None of the heads of this variety in the British Museum have more than ten points. Their colour, according to Jerdon, is a fine clear grey in winter, with a moderately large disc; pale rufous in summer, quite different from the rich mouse colour

of the barasingh. Hodgson's description of the horns is most accurate, the flatness of the brow antlers is very marked, 'pedicles elevate; burrs rather small; two basal antlers, nearly straight, so forward in direction as to overshadow the face to the end of the nasal; larger than the royal antlers; median or royal antlers directed forwards and upwards; beam with a terminal fork, the prongs radiating laterally and equally, the inner one longest and thinnest.' There is an enormous head in the British Museum, the two brow antlers of which bend downwards on each side. As in the case of the barasingh, the second brow antler, or bez, is always longer than the first.

As regards the allied maral stag of Persia and Turkestan, Major Cumberland, in his letters published by 'Land and Water,' 1891, writes that the Turkestan name for the stag is 'bōghè,' the hind being called 'maral.' This deer resembles the red stag, in that the brow antler is longer than the bez, and the crown is more of the wapiti type.

Another variety, with horns also of the wapiti type, *Cervus Eustephanus*, was discovered by Mr. W. Blanford in the Thian Shan mountains. He describes this variety as also having the brow antler longer than the bez.

XXIX. MUSK DEER (*Moschus moschiferus*)

Generally '*Kastura*'; *Garwhal and Kumaon*, '*Bena*,' '*Masaknaba*'; *Cashmere*, '*Roos*,' '*Rous*'

This little deer is found all over the hills above an altitude of 7,000 or 8,000 ft., except in Ladak, though it is said to be plentiful in Thibet, beyond the frontier of Nepal.

Cover of some sort, bushes or timber, seems necessary for it, and the want of this is probably the reason it does not extend to Ladak. Except that district, every shooting ground of the right elevation seems to hold musk deer; and as, particularly in the autumn, they are excellent eating, a chance with a light rifle is well worth taking advantage of, unless in too close proximity to better game. The musk deer has no horns, but

Measurements

Cervus cashmirianus

Authority	Height at shoulder	Length, nose to tip of tail	Tail	Girth of body	Weight as shot	Length of horns	Girth above brow antler	Girth, beam midway	Burr	Length, brow antler	Length, bez antler	Girth, bez antler	Length, median antler	Splay at tips	Widest spread	Inside span	Points	Remarks
	ins.	ins.	ins.	ins.	lbs.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
Dr. Leith Adams	..	..	..	..	..	48	..	..	..	..	..	..	..	..	..	..	..	Sterndale, 'Mammalia'
Major Ward	..	..	..	..	..	47	7¾	..	..	..	..	..	..	29	56	..	13	'Sportsman's Guide'
"	49½	..	..	..	400	..	..	..	..	..	..	..	..	..	..	..	..	" "
Sir E. G. Loder, Bar.	..	..	..	..	..	47	6¾	..	..	..	..	..	..	21¼	..	36⅝	5 × 5	Rowland Ward, 'Horn Measurements'
Major Ward	..	..	..	..	..	46	8	..	..	..	..	..	..	32	50	..	12	'Sportsman's Guide'
'Oriental Sporting Magazine,' 1870	..	..	..	..	..	46	..	7	10	18	..	..	..	..	..	..	..	
Sir V. Brooke	..	..	..	..	..	45⅝	6	..	..	..	..	..	..	25⅞	..	36	8 × 8	Rowland Ward, 'Horn Measurements'
Hume Collection, British Museum	..	..	..	..	..	45¾	8	..	..	..	..	..	..	35	..	41	6 × 6	" "
Hon. C. Ellis	..	..	..	..	..	43¾	5¾	..	..	..	..	..	..	15⅝	..	37	5 × 5	" "
"	..	..	..	..	..	43⅝	6¼	..	..	..	..	..	..	25⅝	..	36½	..	" "
Hume Collection, British Museum	..	..	..	..	..	43¼	6½	..	..	..	..	..	..	18½	..	34½	5 × 5	" "
Dr. Falconer, Brit. Mus.	..	..	..	..	..	43	5⅝	..	..	..	..	..	..	6¼	..	27¾	5 × 5	" "
Mr. M. Kennard	..	..	..	..	..	43	5⅝	..	..	..	..	..	..	20⅛	..	37⅝	6 × 5	" "
Gen. Macintyre	..	..	..	..	..	42	..	7¼	10½	..	..	5½	..	..	..	33	10	'Hindu Koh'
British Museum	..	..	..	..	..	42	5⅝	..	..	..	..	..	..	20⅜	..	33½	6 × 5	Rowland Ward, 'Horn Measurements'
Major Greenaway	52	81	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
The Writer	47	85	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	
"	..	..	..	..	..	36¾	..	..	8	11¼	14½	..	..	25	35	..	10	Showing normal difference between brow and bez antlers
"	..	..	..	..	..	35½	5½	..	8	10½	15½	..	..	..	32	..	10	
Sterndale, 'Mammalia'	48 to 52	84 to 90	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Average of good head	..	..	..	..	..	37	6	..	..	..	..	..	..	..	..	..	6 × 6	

CERVUS AFFINIS

Mr. A. O. Hume	..	..	..	..	..	55¾	6½	..	..	..	..	..	..	17¼	..	40⅞	7 × 6	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	..	..	55¼	8½	7¼	11	14	19¼	..	..	..	..	..	5 × 5	
Lord Northbrook	..	..	..	..	..	55	9⅛	..	..	..	..	..	..	..	..	..	6 × 7	Rowland Ward, 'Horn Measurements'
Dr. Campbell, British Museum	..	..	..	..	..	54⅜	6⅞	..	..	..	..	..	..	21⅜	..	37¼	5 × 5	,, ,,
Dr. Jerdon quotes a head	..	..	..	..	..	54	..	..	..	..	12	..	8	..	47	..	..	Sterndale, 'Mammalia'
Mr. B. H. Hodgson, British Museum	..	..	..	..	..	53¾	6⅞	..	..	..	..	..	..	26⅜	..	44	5 × 5	Rowland Ward, 'Horn Measurements'
Hume Collection, British Museum	..	..	..	..	..	53½	6⅞	..	..	..	..	..	..	30	..	45¾	4 × 5	,, ,,
Col. Tanner	..	..	..	..	..	55	9	..	..	..	..	..	..	..	..	..	..	
British Museum	..	..	..	..	..	52¼	10¼	6½	10⅛	12	13	..	..	..	..	40	5 × 5	,, ,,
Rowland Ward	..	..	..	..	..	52	8	..	..	..	..	..	..	..	..	..	5 × 5	
,, ,,	about 60	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Rowland Ward, 'Horn Measurements'
Sterndale, 'Mammalia'	54 to 60	about 96	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	

CERVUS MARAL

British Museum	..	..	..	..	..	48⅜	6½	..	..	..	..	..	..	38¼	..	40⅞	6 × 5	Rowland Ward, 'Horn Measurements'
,, ,,	..	..	..	..	..	46½	8	7½	11¼	15½	14½	..	..	..	..	..	5 × 5	
Mr. E. Buxton	..	..	..	..	..	43½	..	..	..	..	..	..	..	..	38½	..	14	'Nineteenth Century,' 1891
Hume Collection, British Museum	..	..	..	..	..	40¼	5½	..	..	..	..	..	..	23¾	..	31⅞	5 × 5	Rowland Ward, 'Horn Measurements'
,, ,,	..	..	..	..	..	35¾	5½	..	..	..	..	..	..	19⅞	..	26	5 × 5	,, ,,
Major Cumberland	55	..	..	57½	..	..	..	..	..	..	..	..	..	..	..	..	10	'Land & Water,' 1891

CERVUS EUSTEPHANUS

Mr. Blanford, 'Scientific Results, Second Yarkand Mission'	..	..	..	..	..	51	10⁹⁄₁₀	..	..	..	..	..	..	..	..	..	..	Girth above burr 10½ ins.

Measurements (continued)

Red Deer from Tyrol, &c.

Authority	Height at shoulder	Length, nose to tip of tail	Tail	Girth of body	Weight as shot	Length, of horns	Girth above brow antler	Girth, beam midway	Burr	Length, brow antler	Length, bez antler	Girth, bez antler	Length, median antler	Splay at tips	Widest spread	Inside span	Points	Remarks
	ins.	ins.	ins.	ins.	lbs.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
Lord Powerscourt, 'Pro. Zoo. Soc., 1862'	..	..	..	..	..	68	..	..	..	..	..	..	..	..	65	..	44	From Carpathians? Rowland Ward, 'Horn Measurements'
Col. Howard . .	..	..	..	..	..	49¾	..	7½	11¼	18¼	..	..	..	..	49¼	..	14	Vienna Exhibition
H.R.H. Duke of Edinburgh . .	..	..	..	..	..	48½	..	6	..	..	..	..	..	30	41½	..	5 × 6	(Crimea) Rowland Ward, 'Horn Measurements'
Lord A. Hay, British Museum . . .	..	..	..	..	..	48⅛	..	7¼	..	..	..	..	..	..	..	..	12	Single horn, Asia Minor. Rowland Ward, 'Horn Measurements'
St. George Littledale	..	..	..	..	..	47⅝	..	5½	..	..	..	..	..	38	..	..	6 × 5	Caucasus. Rowland Ward, 'Horn Measurements'
Col. Howard . .	..	..	..	..	..	47¼	..	7½	10¾	15	..	..	..	..	50	..	16	Vienna Exhibition
Sir V. Brooke .	..	..	..	..	..	47½	..	7¼	..	..	..	..	..	34	..	41¼	8 × 9	Germany. Rowland Ward, 'Horn Measurements'
St. George Littledale	..	..	..	..	..	47	..	7⅛	..	..	..	..	..	36	..	37¼	6 × 7	Caucasus. Rowland Ward, 'Horn Measurements'
Col. Howard . .	..	..	..	..	596	..	..	..	..	..	..	..	..	..	..	..	..	Weight of best stags killed in last 8 or 10 years, from Perechinko
" . .	..	..	..	..	564	..	..	..	..	..	..	..	..	..	..	..	..	do. Munkacs
" . .	..	..	..	..	544	..	..	..	..	..	..	..	..	..	..	..	..	do. Pomerania
" . .	..	..	..	..	544	..	..	..	..	..	..	..	..	..	..	..	..	do. Bukowina
" . .	..	..	..	..	540	..	..	..	..	..	..	..	..	..	..	..	..	do. Munkacs
" . .	..	..	..	..	540	..	..	..	..	..	..	..	..	..	..	..	..	do. Sieben Bergen
" . .	..	..	..	..	516	..	..	..	..	..	..	..	..	..	..	..	..	do. East Prussia
" . .	..	..	..	..	508	..	..	..	..	..	..	..	..	..	..	..	..	do. Lower Austria
" . .	..	..	..	..	500	..	..	..	..	..	..	..	..	..	..	..	..	do. Slavonia

the male has two delicate curved tushes, growing down from the upper jaw, which are often over three inches in length outside the gums ; these tushes being the only distinguishing mark between the sexes, it is very hard to tell them apart at a distance.

The hair of the musk deer seems always loose, and comes out readily. A musk deer just grazed by a bullet (by no means an uncommon occurrence with so small a beast) seems to vanish in a cloud of hair. The male has an abdominal gland containing more or less musk according to the season, it being fullest during the rutting season in the winter ; this pod is valuable (a good one is worth Rs. 5 in the jungle), and leads to the musk deer being so mercilessly snared and hunted by natives that in many districts they are almost extinct. Pine martens, wild dogs, leopards, eagles, all seem to prey upon the unhappy musk deer, and if it were not that they breed far more rapidly than other deer (according to Hodgson being able to procreate before they are a year old), they would have no chance of existence at all.

When a musk deer has been killed the pod should be cut off in the presence of the sportsman, and hung up in his tent to dry ; if the shikari is allowed to meddle with it, he will probably extract the musk, and fill up the pod with rubbish. Another very common trick is for the shikari to present his master with the buck's scrotum, and keep the pod for himself.

Musk deer are generally found alone or in pairs, and as they keep a great deal to their particular bit of ground, if one has been seen and not fired at the sportsman may nearly always rely upon finding it again near the same place. When startled this deer gives a low hiss, and as it seldom runs far without stopping to gaze, it generally affords an easy shot. Musk deer are occasionally a nuisance on barasingh ground, and the writer once lost a shot by putting up one of them just as he was getting up to a stag which was calling in the forest.

Measurements.—Sterndale gives length about 36 ins., height about 22 ins. Major Ward, height about 22 ins.,

weight from 25 lbs. to 30 lbs. Colonel Kinloch says it does not stand more than 20 ins., Jerdon 22 or 23 ins.

In Garwhal and Kumaon musk deer appear to be bigger and heavier than in Cashmere.

XXX. BARKING, OR RIB-FACED DEER

(*Cervulus Aureus*, vel *Muntjac*)

'*Kakur*,' *generally throughout the Himalayas* ; '*Ratwa*,' *in Nepal and neighbouring states* ; '*Jungli Bukra*,' *in Central Provinces* ; '*Muntjac*,' *Sundanese*

This deerlet is found pretty generally throughout India, Burmah, Ceylon and the Malay Peninsula, wherever there are fairly high hills covered with forest. Thick cover and plenty of water seem essential to it.

Kakur are not gregarious ; they are generally found in pairs, each pair seeming to keep pretty much to its own particular ravine or patch of jungle. They will often live close to villages, and feed on the crops at the edge of the jungle ; they rarely venture far into the open, and invariably live close to water. Their general colour is a bright golden bay, with the lower parts white ; the tail is rather long, and as the deer when galloping carries his head low and cocks his tail up, he forcibly reminds one of an old buck rabbit. The buck has horns about five inches long, set on bony pedicles about three inches high, which are covered with longish hair. In good specimens there is a small brow antler of about one inch in length, and the tips of the horns should be curved back enough to permit of the head being suspended from a cord by the hooks. The V-shaped creases on the face, from which it derives its name of rib-faced, are dark brown, and there is a dark line up the front of each pedicle. The horns appear to be shed annually. The buck has a pair of sharp stout tushes in the upper jaw, of which he can make very good use. Ward laments the loss of a valuable terrier which was killed by a wounded buck, so that it is advisable to be careful in handling

one. The kakur has a peculiar resonant call, like the hoarse bark of a dog, which can be heard for a long distance ; and as the buck frequently keeps on barking for some time, it will often betray its locality to the sportsman—its locality certainly, but not much else. The stalk is enlivened with song till just the critical moment, when a glimpse of the performer would be so desirable ; then usually comes a dead silence—possibly the buck is waiting for the applause you so ungraciously withhold—no sign of the songster, look as you will there is nothing to be seen but bushes and stems of trees ! Suddenly out of emptiness appears a flash of red surmounted with a brilliant white scut, and a derisive bark, in answer to your snap-shot, proclaims your defeat. Moreover, it behoves one to be wary when stalking a barking kakur ; he may very possibly be barking at a panther, or even in some localities at a tiger, and it is as well to be careful that you do not entertain—not quite an angel unawares. Jungle warnings, such as monkeys swearing and the alarm notes of peafowl and deer, should never be lightly disregarded.

Occasionally kakur make a curious clicking noise, probably, as Kinloch suggests, with the tongue, which is very long. The writer has watched a kakur walking quietly down a sandy river-bed, clicking all the way at intervals ; here certainly the hoofs could not have made the noise in sand. That buck was shot, and as the writer saw another single kakur several times afterwards not far from the same spot, it has struck him that the clicking noise might possibly be a low call from one of a pair to its mate.

In Garwhal the natives occasionally call kakur, using a split ringal cane, and making a call very similar to that used in the Tyrol for roe deer ; but the writer's experience of this class of sport is that one may sit and pipe for a long time before anything comes. Having the covers driven is also poor fun if there is only one gun, as the deer will rarely come right, almost always breaking back ; and by far the pleasantest and best way

Measurements

Authority	Height at shoulder	Length, head and body	Tail	Weight as shot	Length of horns	Girth of horns	Length of brow antler	Remarks
				Cervulus aureus				
	ins.	ins.	ins.	lbs.	ins.	ins.	ins.	
Major Ward	..	..	..	..	8	..	..	'Sportsman's Guide to Ladak, &c.'
"	27	..	..	40	7½	..	..	" " "
"	26	..	..	37	7½	..	..	" " "
Capt. H. Brooke	..	..	..	..	6½	3	..	
Mr. B. H. Hodgson, British Museum	..	..	..	..	6½	2¾	..	Rowland Ward. 'Horn Measurements'
Mr. A. O. Hume	..	..	..	..	6½	3	..	" " "
British Museum	..	..	..	..	6⅓	..	1½	
The Writer	..	..	..	..	6	..	1	
Major Ward	27	..	..	44	6	..	..	'Sportsman's Guide to Ladak, &c.'
"	26	..	..	42	5½	..	..	" " "
"	26	..	..	37	5⅓	..	..	" " "
"	23	..	..	32	..	..	..	A doe .. " "
Major FitzHerbert	20	34	4½	32	..	..	..	
Col. Kinloch	about 18	..	..	..	about 5	..	..	'Large Game Shooting'
Sterndale's 'Mammalia'	26 to 28	about 40	7	..	2 to 5	..	..	
Average of good head	..	..	..	..	5	..	1	

of getting kakur is by strolling through the forest in the early morning and evening when, if there are any about, the sportsman is pretty sure to see or hear them.

XXXI. THE LARGE WILD SHEEP OF INDIA
(*Oves Poli*, *Ammon*, &c.)

In Central and Northern Asia there were at one time no fewer than eight recognised varieties of giant wild sheep, viz. *O. Poli*, *O. Karelini*, *O. Heinsi*, *O. nigrimontana*, *O. Ammon*, *O. Hodgsonii*, *O. Brookei*, *O. nivicola*.

Mr. W. T. Blanford, however, after inspecting a magnificent collection of heads, made by Hon. C. Ellis, which exhibit every gradation of curve between the two extreme types, declared in his paper to the Zoological Society in 1884 that he considered *O. Poli* and *O. Karelini* to be practically the same species, and the formidable list may be further reduced from a sportsman's view by massing the varieties into three broad types, viz :

1. *O. Poli* with its little known varieties, *O. Heinsi*, and *O. nigrimontana* ; for though these appear to differ somewhat in size (*O. nigrimontana* being a comparatively small animal), their horns are of the same wide-spreading type.

2. *O. Ammon*, *O. Hodgsonii* and *O. Brookei* ; the difference between the first two is very trifling, and *O. Brookei* is considered by some authorities to be possibly a hybrid between *O. Hodgsonii* and *O. Vignei* (Shapoo).

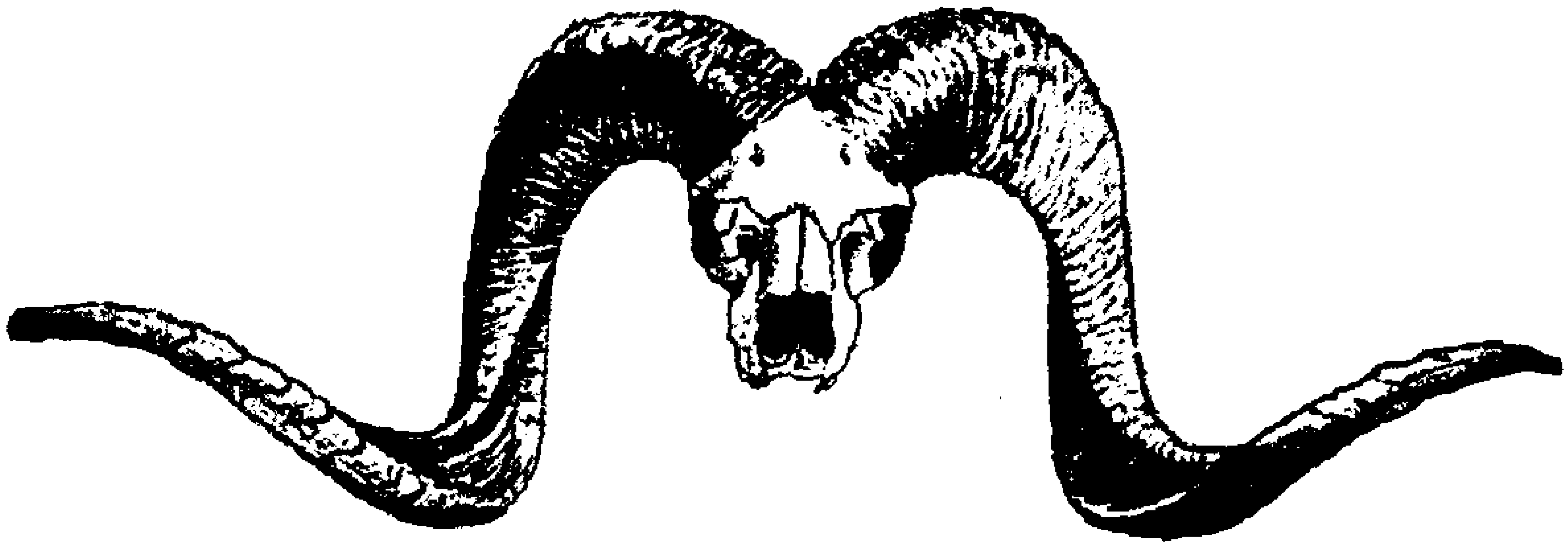
3. *O. nivicola*, which more nearly resembles *O. montana* (the Bighorn of the Rocky Mountains).

The first type is found, according to M. Severtzoff, only in Turkestan, from the Pamir through the Thian Shan range as far eastwards as Tengri Khan ; its varieties being located as follows ; *O. Heinsi* in the Tockmack district west of Tengri Khan ; *O. nigrimontana* in Karatan, near Samarcand.

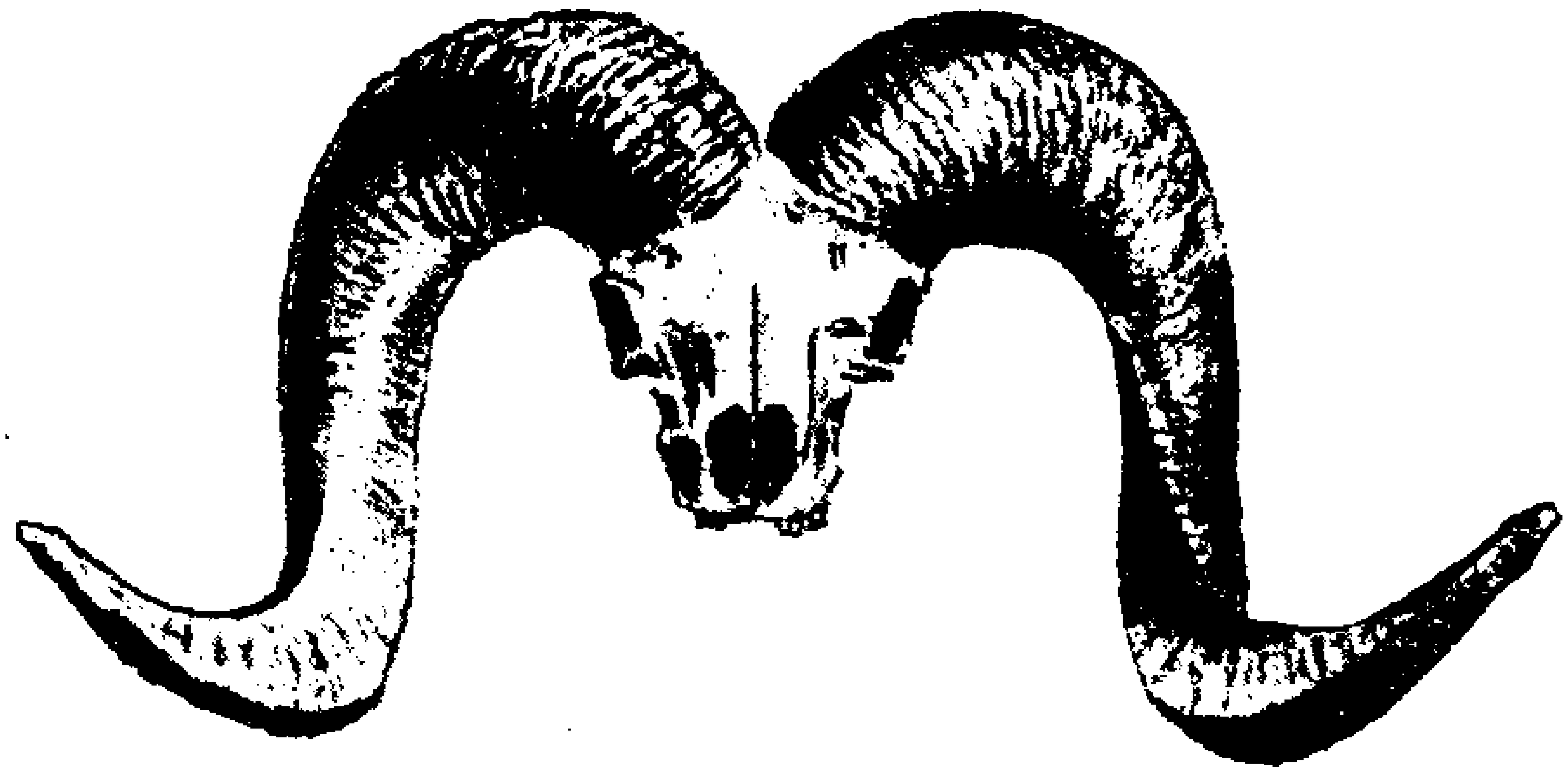
The second type is not found in Turkestan. Its range is the Altai from Tengri Khan as far eastward as the sea of Baikal.

and then southwards by the sources of the Hoang-ho and Yang-se-kiang rivers down to Ladak and the southern frontier of Thibet.

The third type is found in Kamtchatka.



No. 1, extreme type, Ovis Poli



No. 2, intermediate type

No. 3, extreme type, Ovis Karelini

In colour all these sheep are much the same; generally a rather rich greyish brown fading to greyish white towards the tail and belly, with, in the ram, a greyish white ruff on the neck. This is the chief distinguishing mark of a ram *Ovis Ammon*

at a distance, the ewe having a brown neck; in fact, the ram looks as if his thoughtful spouse had insisted on his wearing a white comforter for fear of catching cold. The horns of the ram, large as they are, are of such a pale colour as to be hardly distinguishable in certain lights at long distances. The *Ovis Poli* appears to have little or no ruff, but has a dark line down

Ovis Ammon

Ovis Nivicola

the back, which the *Ovis Ammon* has not, and has also a more clearly defined white anal disc.

Old rams of the *Ovis Ammon* are by no means easy to bring to bag. The bare open downs they live on afford little or no cover for a stalk; the wind in Ladak, piercingly cold as it is, seems to take a delight in blowing from all points of the

Measurements

Authority	Height at shoulder	Length nose to tip of tail	Weight	Length of horns	Girth at base	Span between tips	Skull	Remarks
Ovis Ammon								
	ins.	ins.	lbs.	ins	ins.	ins.	ins.	
Proc. Zoo. Soc. 1875	43	..	..	49	18½	32	12	From Siberia?
,, ,,	46	..	..	48½	19	31	..	,,
British Museum	..	..	..	48	18¾	..	..	Specimen, No. 45-4-21-9. From Siberia
Mr. O. Shaw	..	..	..	47	..	..	..	
Mr. A. O. Hume	..	..	..	46½	19¾	20	..	Rowland Ward, 'Horn Measurements'
Sir V. Brooke	..	..	..	45½	17½	24	14	Proc. Zoo. Soc., 1875
H.R.H. Duke of Teck	..	..	..	45½	16½	about 17	..	Rowland Ward, 'Horn Measurements'
Major Ward ('Sportsman's Guide to Ladak and Cashmere')	46 to 48	..	250 to 280	..	..	..	..	
,, ,,	..	..	..	45	20	..	..	
Proc. Zoo. Soc., 1875	44½	..	..	45	19¼	..	..	
Col. Howard Brooke	..	..	..	44	18	..	..	
Mr. H. C. V. Hunter	..	..	..	43½	19½	loose horns	..	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	43	16¾	..	..	
Major Greenaway	..	..	..	42½	17	..	..	
Mr. A. O. Hume	..	..	..	42½	16½	19	..	Rowland Ward, 'Horn Measurements'
Hume Collection, British Museum	..	..	..	42½	16	about 18	..	,, ,,
Rowland Ward	..	..	..	42½	16	18	..	,, ,,
Mr. J. Carr Saunders	..	..	..	42½?	15¼	..	..	,, ,,
H. R. H. Duke of Edinburgh	..	..	..	42⅜	16¼	20	..	,, ,,

Hume Collection, British Museum	..	..	..	42⅛	16¾	14¼	..	" "
Mr. A. O. Hume	..	..	..	42⅛	16½	18	..	" "
Capt. Ballantyne	..	..	..	42	16	..	..	
Sir V. Brooke	..	..	..	42	17¾	17½	15	Proc. Zoo. Soc., 1875
Hume Collection, British Museum	..	..	..	42	16⅞	about 17¼	..	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	42	14	..	..	
Hon. Walter Rothschild	..	..	..	41⅝	16	..	..	Rowland Ward, 'Horn Measurements'
British-Museum	..	..	..	41½	16¾	..	..	
Mr. A. O. Hume	..	..	..	41¼	17½	16	..	Rowland Ward, 'Horn Measurements'
Major Ward ('Sportsman's Guide to Ladak, &c.')	..	..	..	41	18½	..	..	
The Writer	44	..	..	41	17	..	..	
St. George Littledale (British Museum)	..	..	..	40½ ?	14½	about 26¼	..	Rowland Ward, 'Horn Measurements'
Hon. C. Ellis	..	..	..	40⅜	17⅝	20⅜	..	" "
Hume Collection, British Museum	..	..	..	40¼	17¼	20	..	" "
Col. Kinloch ('Large Game Shooting')	48 to 49	..	..	40	17	..	..	
Hume Collection, British Museum	..	..	..	40	16¾	19½	..	Rowland Ward, 'Horn Measurements'
" "	..	..	..	40	16	18½	..	" "
Major Greenaway	45	76	212	36	15½	..	..	Weighed in pieces. Estimated 240 lbs. as shot
Gen. Macintyre ('Hindu Koh')	..	..	350	about 40	18	..	..	Cleaned, including head
Sterndale	40 to 48	..	..	..	..	..	..	
Mr. K. Mackenzie	48	..	..	..	..	..	..	
" "	49	..	..	..	..	..	..	
Jerdon quoting Colonel Markham	..	..	..	..	24	..	..	

Measurements (continued)

Authority	Height at shoulder	Length nose to tip of tail	Tail	Length of horns	Girth at base	Span between tips	Skull	Girth of chest	Remarks
OVIS POLI									
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	
Gen. Lord Roberts	..	..	..	75	16	54½	..	..	'Smoothbore,' letter to the 'Asian,' November 13, 1891
Mr. Hume	..	..	..	75	14	48	..	..	Rowland Ward, 'Horn Measurements'
Col. Tanner	..	..	..	73	15	48	..	..	(Possibly the same head)
Sterndale, 'Mammalia'	..	..	..	73	14	48	..	..	Rowland Ward, 'Horn Measurements'
Mr. L. Flower	..	..	..	68½	15	35¾	..	..	
Col. R. Pole Carew	..	..	..	68	17	43	..	..	” ”
Indian Museum, the 'Asian,' November 13, 1891	..	..	..	68	16	52	..	..	” ”
Col. R. Pole Carew	..	..	..	67	16½	42	..	..	” ”
Sterndale, 'Mammalia'	..	..	..	67	16	53	..	..	
Sir E. G. Loder, Bart.	..	..	..	66⅞	15¾	46	..	..	Rowland Ward, 'Horn Measurements'
Mr. A. O. Hume	..	..	..	66¼	13¾	..	..	..	” ”
Hume Collection, British Museum	..	..	..	66	15¼	44	..	..	” ”
” ”	..	..	..	65¾	16	48	..	..	” ”
Col. T. E. Gordon, Brit. Mus.	..	..	..	65½	16	53	..	..	” ”
Mr A. O. Hume	..	..	..	65¾	16¼	..	..	..	” ”
Capt. Blane	..	..	..	65	16½	49½	..	..	” ”
St. George Littledale	..	..	..	65	..	..	..	..	” ”
Rowland Ward	..	..	..	65	..		..	..	” ”
Hon. C. Ellis, quoted Proc. Zoo. Soc., 1884	..	..	..	53	..	51	..	..	
” ”	..	..	..	58	15½	50½	..	..	No. 1.—Extreme type (*O. Poli*)
” ”	..	..	..	57½	..	47	..	..	
” ”	..	..	..	62	..	47½	..	..	
” ”	..	..	..	63½	..	48	..	..	
” ”	..	..	..	61½	..	46½	..	..	

,, ,,	..	..	..	59¾	..	43¾	..	..	
,, ,,	..	..	..	61	..	43	..	..	
,, ,,	..	..	..	55	17	37	..	..	No. 2.—Intermediate type
,, ,,	..	..	..	60½		39½	..	..	
,, ,,	..	..	..	63½	16	39	..	..	No. 3.—Extreme type (*O. Karelini*)
M. Severtzoff	46	79	..	57	..	42	..	..	Proc. Zoo. Soc., 1875
,, ,,	42·6	71	..	44	..	34	14	..	,, ,, (*O. Karelini*)
Major Biddulph	41	67	3½	48	14	..	13·3	..	
							11	49½	Yarkand Mission

OVIS HEINSI

M. Severtzoff	..	..	..	33·2	..	31·4	11·4	..	Proc. Zoo. Soc., 1875

OVIS NIGRIMONTANA

M. Severtzoff	34	57	..	38	..	29·6	10·8	..	,, ,,

OVIS NIVICOLA

Dr. Guillemard, 'The Cruise of the Marchesa'	40	66	..	38	13½	26	9¾	54	
,, ,,	41	65	..	35½	14	26½	10¾	..	
,, ,,	39	67	..	35	13¼	25½		55	
,, ,,	39½	64	..	35	13¼	21	10½	54	
British Museum	37	64	..	34¾	14½	25	10½	55	Rowland Ward, 'Horn Measurements'
M. Severtzoff	..	..	..	34½	11⅞	17¾	..	..	Proc. Zoo. Soc., 1875
Sir E. G. Loder, Bart.	37	..	..	33	12¾	..	..	..	Rowland Ward, 'Horn Measurements'
Dr. Guillemard, 'The Cruise of the Marchesa'	..	..	..	32¾	13½	23	..	..	
,, ,,	..	..	..	32½	13¾	22½	..	..	
,, ,,	..	..	..	32¼	14	21	..	..	

OVIS BROOKEI

Sterndale's 'Mammalia'	..	..	..	33½	13⅜	..	11	..	

compass in turn, especially if there are any clouds about; the rams themselves are particularly wary and keen-scented, and the least suspicion of danger will set them marching steadily across country for miles without stopping. In the summer, like most hill animals, the old rams leave the ewes and young ones and form small flocks by themselves, selecting favourite valleys to which they repair year after year, and being rarely found on the same ground as the ewes at that season, i.e. after the middle of June. I have, however, seen a flock of five rams and ten ewes together as late as June 11 and secured a big ram out of it. Ward's remarks about hunting *Ovis Ammon* are worth quoting:

Stalking in Ladak is very often a matter of time. Many of us will march for a month to get on to *Ovis Ammon* ground, and yet will not consent to wait a few days after the game is sighted. Naturally, in a country where the hills are devoid of cover, the game is often seen on spots where it is useless trying to approach it; but, if watched for a few hours, it is almost certain to graze its way into a more favourable position. Avoid going after game on gusty and cloudy days, and exercise patience, remembering that you have probably marched some hundreds of miles to obtain a few shots, and one or two days' more or less work can make but little difference.

Even supposing the sportsman to have everything in his favour, wind, cover, and the rest, there are pretty sure to be some kyang about, and these once disturbed, good-bye to the oves. The writer had once been watching two fine old rams from early morning till 2 P.M. before the wind would let him attempt the stalk; he had got within a quarter of a mile of the rams with absolutely nothing to do but walk straight on up to them, when suddenly a brute of a kyang jumped up from behind a rock where he had been lying hid, galloped straight up the valley past the oves, found seven devils worse than himself, brought them all back to show them the quaint manners of an infuriated man with a gun, and concluded the entertainment by galloping round and round him out of shot. The oves naturally took

the hint, and not caring for an asinine circus, simply marched off to the next county.

Large bags of ram oves are consequently seldom made. Mr. O. Shaw got nine in 1877, including one of 47 ins.; the rest of the bag was, one bull yak, eight or ten burrel, one of 27 ins., eleven Thibetan antelope and one shapoo; this was an exceptional bag by an exceptionally hard-working sportsman.

The native names for *O. Poli* are 'Rass,' 'Roosh,' 'Goolga' (the male), and for *O. Ammon* 'Nyan.'

XXXII. BURREL (*Ovis Nahura* vel *Burhel*)

Native names: 'Baral,' 'Barut'; in Ladak 'Napo' the male, 'Namoo' the female; Zanskar, 'Snapo,' 'Snamoo'; on the Sutlej 'Wa'

Sterndale appears to have fallen into a curious mistake about this sheep. He says: 'The name *Ovis Nahura* is not a felicitous one, as it was given under a mistake by Hodgson, the nahoor being quite another animal. I think Blyth's name of *Ovis Burhel* should be adopted.' On reference, however, to Blyth's account in the 'Proceedings Zoo. Soc. 1840,' it will be found that he calls the animal generally known as burrel the 'nahoor,' and says of *Ovis Burhel*, 'It is smaller and more robust than the nahoor, with shorter ears and very dark horns, having no white about it; and general colour dark and rich chestnut brown, with the ordinary black markings upon face, chest, and front of limbs very distinct.' The specimen came from the Boorendo Pass, but as no more specimens have been obtained from that locality or elsewhere, it appears to be quite possible that Blyth was misled by a native-cured skin. Discoloration by curing is common.

The burrel has a very extended range, reaching from Ladak on the west (it apparently does not extend into Baltistan) to East Thibet, as Père David found it in Moupin. Its southern limit is the line of the Himalayas; it extends up north to the Kuenluen ranges, and was obtained by Prejevalski on the Altyn-Tagh. It seems to require an altitude of at least

10,000 ft., and many of the shooting grounds are quite 17,000 ft. above the sea-level.

Its general colour is a light slaty grey. The ram has black marks on the chest, side, and legs, and these are the points to look for in a distant flock to distinguish the sex ; the ram's horns being of a very pale colour, are often hardly distinguishable.

The old rams in the summer generally live apart from the ewes, and on some grounds, notably about Chumatung on the Indus, the rams seem to take themselves off to separate valleys ; usually they keep to another part of the same valley, and occasionally intermix.

Burrel are quite the hardest animals to see on a hillside unless they are moving ; their colour so exactly matches the blue shale of Ladak, that when they are lying down a flock may be easily overlooked by even a careful man with glasses. Being pretty plentiful where they are found at all, and as a rule, where not much shot at, fairly easy to approach, a visitor to Ladak, if he works at all, must indeed have been behind the door when the luck was served out if he cannot get a few burrel heads. Ordinarily they are found on fairly broken ground, and usually not very far away from rocky cliffs of some sort ; they are capital climbers, no sheep better, and a wounded ram is by no means an easy beast to recover. If a burrel had only the horns of an ibex he would be the most charming beast to hunt in the whole of the Himalayas. An old ibex when he is shot stinks appallingly, and is practically uneatable. A burrel on the other hand, no matter how old a ram he may be, is always excellent ; his head, pretty trophy as it is, is his weak point. The writer has seen burrel and ibex on the same ground, though never actually feeding together ; a friend in 1866 saw burrel and ther feeding together between Joshimath and the Niti Pass, and General Macintyre also notices this on the same ground.

As with ibex, several shots can generally be obtained at a flock of burrel before they get out of range, provided the stalker keeps hidden ; but he should take pains to stop his

cripples, if he does not want a stiffish task set him afterwards in recovering them. Major Ward recommends using Baltistan dogs, and if procurable, good dogs no doubt would be invaluable; but the mere fact of having dogs out, unless they are exceptionally good and led by a native of more than ordinary intelligence, generally so multiplies the chances against a successful stalk that one is better without them. English dogs, he says, are useless among rocks and cannot stand the rarefied air.

I remember having a capital day with burrel. I sighted a flock of eight good rams in the morning, but could not attempt to close with them till the afternoon on account of four kyang who persistently kept in the way. At last the kyang fed away, and after a longish détour the burrel, who were lying down, were approached by my sliding down the hillside on my back. Having got within fifty yards of one whose horns were just visible, the expedient of shuffling among the loose stones with the hand was tried to get him to stand up, but this only brought the tips of an ear in sight by the base of the horn. Another shuffle and the ram stood up, but only showed about a couple of inches of the top of his shoulder. Foolishly firing at this instead of at his neck, the shot missed, the whole flock bolted at once, and a running shot with the left barrel also missed. Reloading at once, the chase was carried on down the hillside, and the burrel were again found, standing looking at their pursuer about a hundred and fifty yards off. Picking out the biggest ram, a shot from the shoulder rolled him over, but a snap-shot at the hind-quarters of another disappearing down the hill missed. Another run of about three hundred yards afforded another chance, as when within one hundred and eighty yards of the flock it again halted, and a second ram fell to the shot. The rest went about three hundred yards and stood again. I still followed, and at two hundred and fifty yards broke the forearm of a third ram close to the body. By this time rest was the first necessity, but after a short pause the wounded ram was followed up and bagged with another shot. The first was ten

years old, horns 25½ ins. by 14 ins. thick; second eight years, 23 ins. by 12 ins.; third eight years, 22 ins. by 10½ ins. Bad shooting but good fun.

Amongst other varieties of burrel are the Barbary burrel (*Ammotragus Tragelaphus*), of which there is a skeleton in the British Museum which stands 33½ ins. at the shoulder, and a pair of horns measuring 26 ins. in length by 11 ins. in girth; also the Caucasian burrel (*Capra Pallasi*), of which there is a specimen in the same museum, whose horns are 29 ins. long by 12 ins. in girth; but the animal looks more like a goat than a sheep, having a rudimentary beard, and the horns are more like those of *Capra pyrenaica* than *Ovis Nahura.*

XXXIII. SHAPOO (*Ovis Vignei*)

Native names: 'Shapoo' the male, 'Shamoo' the female; in Astor, 'Oorin'

Shapoo and oorin, though by some naturalists classed as separate varieties, may practically be considered identical; the writer has hunted both, and is unable to distinguish any difference in appearance or habits. The annual winter migration of oorin to the Boonji Plain is probably attributable to the snowfall in Astor being heavier than that of Ladak.

The only other difference (giving the result of individual experience) is that oorin are not nearly so restless as shapoo, being pretty regular in their feeding hours, and lying down throughout the heat of the day. Shapoo, on the other hand, are perpetually on the fidget. In colour they appear identical, generally a pale reddish grey fading into white below. The profuse black beard of the *Ovis cycloceros* is entirely absent, the shapoo in his winter coat having only a short stubbly brown beard, and in summer a dark line on the throat. The different points of *Ovis Vignei* and *Ovis Cycloceros* are briefly as follows, according to Mr. Sclater ('Pro. Zoo. Soc.' 1860):

Ovis Vignei	*Ovis cycloceros*
Horn rather compressed laterally.	Much compressed laterally.
Rounded posteriorly.	Much compressed posteriorly.
Curving outward and backward.	Curving outward and inward.
Points divergent.	Points convergent.
General colour, brownish grey.	General colour, rufous brown, with blotch on flanks, and lateral line blackish.
Beard short, of stiffish brown hairs.	Beard profuse, reaching to knees, black intermixed with white hairs.

The two varieties are much of the same size, but are entirely different in colour and habits. The horns of the shapoo are generally more massive than those of *Ovis cycloceros*, but the horns of both so vary in type and so closely resemble those of *Ovis Gmelini* from Asia Minor, that it is almost impossible, except for a highly trained scientific eye, to decide from this point alone to which of the three varieties a specimen belongs. Shapoo seem only to be found in the valley of the Indus, from a few miles above Leh down to the junction of the Astor river, How far below that they extend the inhabitants of Chilas only know, and they are not famed for hospitality or for communicating their knowledge. There appears to be a gap in the continuity of the species about Shigar and Rondu, which separates the shapoo from the oorin. The writer has never heard of shapoo being obtained there, and it would be interesting to know how far below Leh they are found. Shapoo seem to be very fond of wild thyme, which almost invariably grows plentifully on the ground they frequent. The venison is inferior to that of either *Ovis Ammon* or burrel.

The ram shapoo is a very game-looking beast, and the horns, standing well out from his head, show off to great advantage; but there is not an animal in the whole of the Himalayas so vexatious to hunt. Markhor are bad enough in

all conscience, but even markhor are less heartbreaking to deal with than shapoo.

The writer once met a real typical shapoo, a true son of Belial. The beast started out of a ravine, galloped as hard as he could lay legs to the ground for four hundred yards, and then calmly lay down to think. After about a quarter of an hour he rose, strolled leisurely over a ridge, and then cantered off to some rocks about three-quarters of a mile away, where he lay down again. This necessitated a climb to the top of the hill, whence, wind and cover being perfect, the stalk would be easy enough. He remained there just long enough to enable the pursuer to begin the easy part of the stalk, when up he got, cantered gracefully back across the valley, and lay down on the opposite hill, in another very tempting position. This move entailed a détour, so as to cross the valley out of sight, and another climb up the far hill ; half an hour was spent in reaching the desired spot : but though from there a magnificent view could be had of all the country round, there was not a sign of the shapoo, and the ground was too dry to show his tracks. Verily, shapoo are only shot when they give themselves away.

Shapoo are very tough beasts. The writer once regularly raked a ram galloping straight from him at thirty yards ; the bullet, from a ·500 Express, caught him on the rump, and the base of it was afterwards cut out in front of the liver ; yet the ram ran some two hundred and fifty yards, stopped for about a minute to look round, and then started off again at a gallop, but after going a hundred yards fell over dead. The writer remembers no other instance of an animal stopping to gaze in its death gallop.

XXXIV. OORIAL (*Ovis cycloceros*)

Generally 'Oorial,' 'Kuch,' in the Suleiman range

This sheep is found in the Salt range near Jhelum, and where-ever there are any suitable hills on both banks of the Indus from about Peshawur down to Beloochistan, where it is replaced by the next variety, *Ovis Blanfordi*. The ram has a long ruff of

Measurements

Authority	Height at shoulder	Length, nose to tip of tail	Weight	Length of horns	Girth at base	Splay between tips	Remarks
OVIS NAHURA							
	ins.	ins.	lbs.	ins.	ins.	ins.	
Mr. B. H. Hodgson, 'Proc. Zoo. Soc.,' 1840	..	..	..	32	..	..	Rowland Ward, 'Horn Measurements'
Mr. A. O. Hume	..	..	..	30⅝	12¼	21⅞	,, ,, ,, ,,
,,	..	..	..	30	12¼	22½	,, ,, ,, ,,
H.R.H. Duke of Edinburgh	..	..	..	29½	11⅝	25½	,, ,, ,, ,,
Major Ward	..	..	..	29	..	..	'Sportsman's Guide to Ladak, &c.'
Hume Collection, British Museum	..	..	..	28	11	20¼	Rowland Ward, 'Horn Measurements'
Captain G. Campbell	..	..	..	27¾	10¼	10	,, ,, ,, ,,
Mr. St. George Littledale, 1877	..	..	..	27¼	11	21¼	,, ,, ,, ,,
Major Ward	..	..	..	27	..	..	'Sportsman's Guide to Ladak, &c.'
,,	..	..	150	..	..	..	,, ,, ,,
,,	..	..	119	..	..	..	,, ,, ,
Mr. O. Shaw	..	..	..	27	..	..	
Gen. Macintyre	..	..	..	27	..	..	'Hindu-Koh'
Major Greenaway	..	..	..	26½	12½	..	
,,	..	..	..	26½	10	..	
,,	..	..	97 cleaned	..	..	..	
Sir V. Brooke	..	..	..	26¼	11⅞	23	Rowland Ward, 'Horn Measurements'
Hon. W. Rothschild	..	..	..	26¼	12	21¼	,, ,, ,, ,,
Sir E. G. Loder, Bart.	..	..	..	26¼	10⅞	22	,, ,, ,, ,,
Hume Collection, British Museum	..	..	..	26⅛	12⅜	25	,, ,, ,, ,,
Mr. Rowland Ward	..	..	..	26	12	20½	,, ,, ,, ,,
Col. Kinloch	..	..	..	25½	..	..	'Large Game Shooting'
The Writer, June 24, 1875	..	..	..	25½	14	..	
,, ,,	34	..	..	21	11	..	
Sterndale, 'Mammalia'	30 to 36	54 to 60	..	24 to 30	12 to 13	..	
Average (according to Major Ward) seems fair	33	52	130	22	11	..	'Sportsman's Guide to Ladak, &c.'

Measurements (continued)

Authority	Height at shoulder	Length, nose to tip of tail	Weight	Length of horns	Girth at base	Splay between tips	Remarks
			Ovis Vignei				
	ns.	ins.	lbs.	ins.	ins.	ins.	
Mr. J. Carr Saunders	..	..	..	38⅝	12¼	11¼	Rowland Ward, 'Horn Measurements'
Mr. A. O. Hume	..	..	..	37½	10¼	11	" " " "
" "	..	..	..	36⅜	9⅛	about 17	" " " "
" "	..	..	..	36¼	11¼	..	" " " "
Major Ward	..	..	..	35¼	11¾	..	'Sportsman's Guide to Ladak, &c.'
Dr. J. Aitchison, British Museum	..	..	..	35½	10½	16	Rowland Ward, 'Horn Measurements'
Mr. J. Carr Saunders	..	..	..	34	10	..	
Major Ward	..	..	..	34	..	..	'Sportsman's Guide to Ladak, &c.'
Mr. A. O. Hume	..	..	..	33⅝	9⅛	..	Rowland Ward, 'Horn Measurements'
Sir E. G. Loder, Bart.	..	..	..	33⅛	11½	10⅝	" " " "
Major Ward	..	..	..	33	..	..	'Sportsman's Guide to Ladak, &c.'
Major Greenaway	36	53	65 cleaned	..	..	..	
"	36	52	..	..	..	..	
The Writer	38	..	..	22	10½	..	
Captain H. Brooke	38	..	..	28	12	..	
Average of good head	..	..	..	26	10	..	

Ovis cycloceros

R.A. Mess, Attock	..	..	..	38½	..	..	Sterndale, 'Mammalia,' Appendix C
Captain W. Cotton, F.Z.S.	..	..	..	35½	..	..	" " "
Sir V. Brooke	..	..	..	32½	10	11½	Rowland Ward, 'Horn Measurements'
Hume Collection, British Museum	..	..	..	31⅞	9¼	5¼	" " " "
" " "	..	..	..	31¼	8½	16	" " " "
Col Kinloch	..	..	..	31	10¼	..	'Large Game Shooting'
"	about 36	..	..	..	..	..	" "
Sir V. Brooke	..	..	..	30¾	9¾	20½	Rowland Ward, 'Horn Measurements'
Hume Collection, British Museum	..	..	..	30	10½	10	" " " "
Sir V. Brooke	..	..	..	30	9⅜	11¼	" " " "
Major FitzHerbert	36	..	..	30	9½	..	
Capt. H. Brooke	..	..	..	30	6	..	
Major Greenaway	34	..	..	..	..	..	
Sterndale, 'Mammalia'	about 36	about 60	..	29½	10	..	
Average of good head	..	..	..	30	9½	..	

Ovis Blanfordi

Hume Collection, British Museum	..	..	..	36½	9⅝	single horn	Rowland Ward, 'Horn Measurements'
" " "	..	..	..	31⅞	9⅝	13⅞	" " " "
" " "	..	..	..	23⅝	9½	17¾	" " " "

grizzled black hair which, flowing from his throat and chest down to his knees, emulates the grand beard of a markhor; this beard drops off in the summer, but begins growing again in August, and is at its full length during the rutting season late in September, which is about the best time for procuring good heads.

Oorial, like stags, seem to affect particular spots at that season, and certain hills which at other times of the year hold nothing but ewes and young ones will just then invariably have big rams on them. Oorial ground has hitherto been practically restricted to the Salt range, and a 30-in. ram there is now a rarity. The country on the right bank of the Indus is being yearly made more accessible, however, and there are large tracts of good oorial ground in that direction that are as yet practically unshot. Oorial shooting, however, is by no means a summer amusement, and there is little to be gained then except dysentery from bad water and sunstroke by hunting the deep stifling ravines and almost red-hot stony hills. In the cooler months it is most enjoyable. As a rule one gets a fair number of chances, the ground being so broken that stalking is by no means difficult. An old ram oorial is a fine game-looking animal, and though not to be compared to burrel, is still very fair eating. The best way of hunting them is by walking along the tops of the ridges and carefully examining the ground below; as there are often a good many bushes on the hillside, oorial are not always very easy to see, especially if they are lying down, so the pace should be slow. The natives of the salt range are generally expert trackers, and as a wounded oorial is by no means an easy beast to recover, their skill is doubly appreciable when following up a good ram with a broken leg. The way they will carry the trail through the marks of a flock of sheep or along stony nullahs and hillsides with perhaps only an occasional spot of blood to help them, is quite charming after the bungling attempts at the art one generally sees displayed by the natives of the Himalayas.

As oorial are perpetually seeing shepherds and other natives

they do not become alarmed at the sight of man at a distance; but as they are a good deal driven about, especially by the cultivators whose crops at the foot of the hills they feed on at night, no liberties can be taken during the stalk, and the sides of the ravines being often excessively steep, good noiseless stalking shoes are requisite.

XXXV. OVIS BLANFORDI

This variety is found in Khelat, and a few specimens have been procured near Quetta. Its horns are described as being longer and more slender than those of *O. cycloceros* or *O. Vignei*, and as having a second twist outwards at the ends. It has a white beard, unlike either shapoo or oorial.

XXXVI. MARKHOR (*Capra megaceros* vel *Falconeri*)

Native names:
Cashmere, '*Markhor*'; *Ladak*, '*Rache*'; *Astor*, '*Boom*'

Whether this king among goats deserves his name of 'snake-eater' or not is hardly likely to be settled. Shikaris all believe that markhor do eat snakes, some going as far as to say that they suck the snakes out of their holes, and swallow them like macaroni; and Colonel Kinloch supports the theory.

But though some hundreds of markhor have been shot by Europeans, the fact has hitherto not been proved; and the writer ventures in all humility to suggest that the tale is derived from some old legend, and refers, in spite of the Persian name which may have become corrupted, to the long snake-like horns.

Be this as it may, an old markhor swaggering along a ledge on a precipitous hillside, with his long black beard and white mane floating down to his knees, showing off every inch of his beautiful horns—as no beast knows better how to do, except perhaps a really big stag in the rutting season—is one of the most glorious sights in the Himalayas.

The beast looks such a gentleman with his lean head and

small ears, his powerful back and quarters, and his dignified carriage. Alas! it is all looks! His smell is something fearful, and manners he has none. Ibex and burrel can be trusted, when they are lying down after their morning feed, at all events not to move far; but markhor, no. You may watch a flock feeding till late in the morning, and they will lie down comfortably, apparently for the day; you begin your stalk with

The Astor markhor

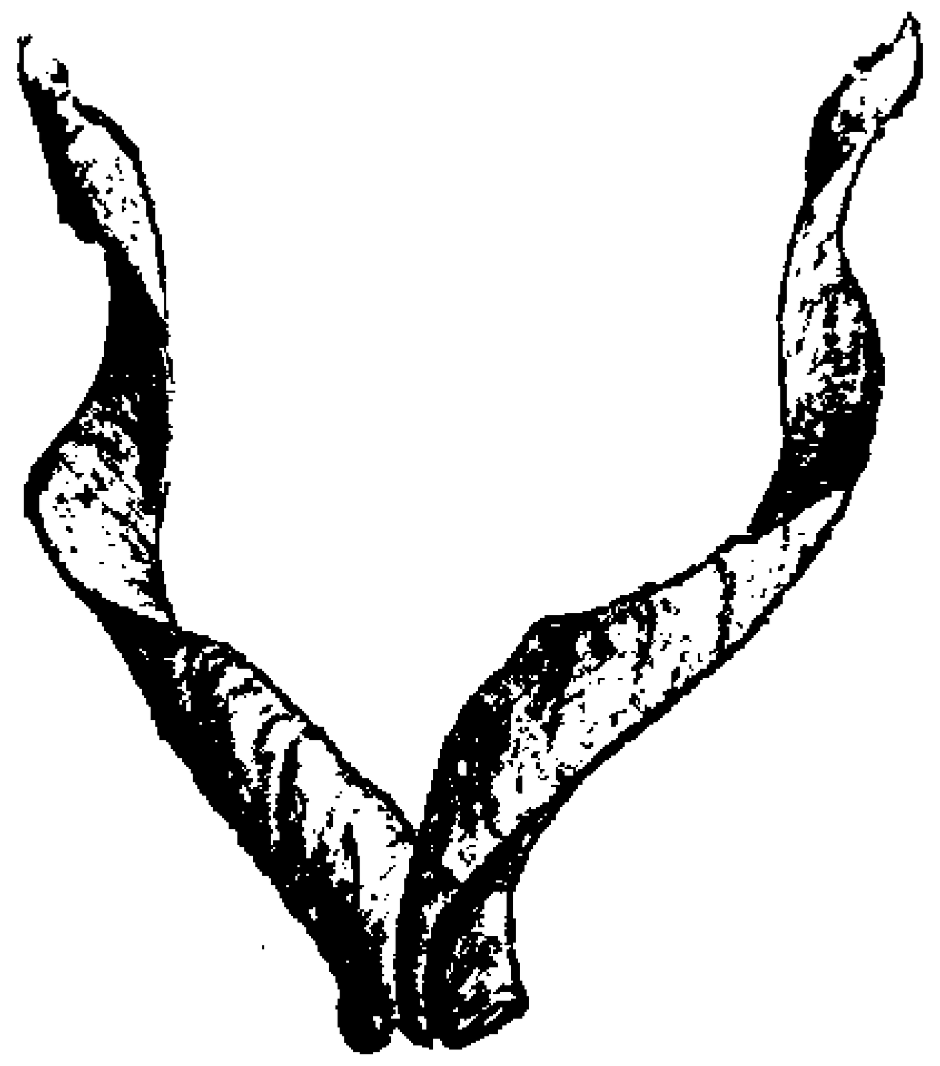
everything in your favour; suddenly there is a clatter of stones and a cloud of dust, you peep over a spur, and see the whole flock galloping wildly down the hill. After going half a mile, they probably pull up, begin feeding again, and again stretch themselves out on the ground as if nothing had happened. This little manœuvre probably necessitates your climbing pain-

fully back to the top of the ridge, and starting your stalk afresh, the intervening ground being impracticable. Once more you try, leaving a man on the top of the hill to watch and signal what the beasts do. You stalk carefully on; the watcher makes no sign; you creep on the last hundred yards, to the exact spot you wish to reach, and there is nothing. You search the ground as far as you can get, and there are only a few footprints leading over impassable ground; you climb back again, probably the only way you can go, vowing vengeance on the watcher, and he tells you that the markhor lay quiet till you were beginning your last crawl in—every second he expected to hear the shot: suddenly they jumped up and disappeared, and owing to the steepness of the ground he could not tell which way they had gone. This sort of thing will happen over and over again, particularly in Astor.

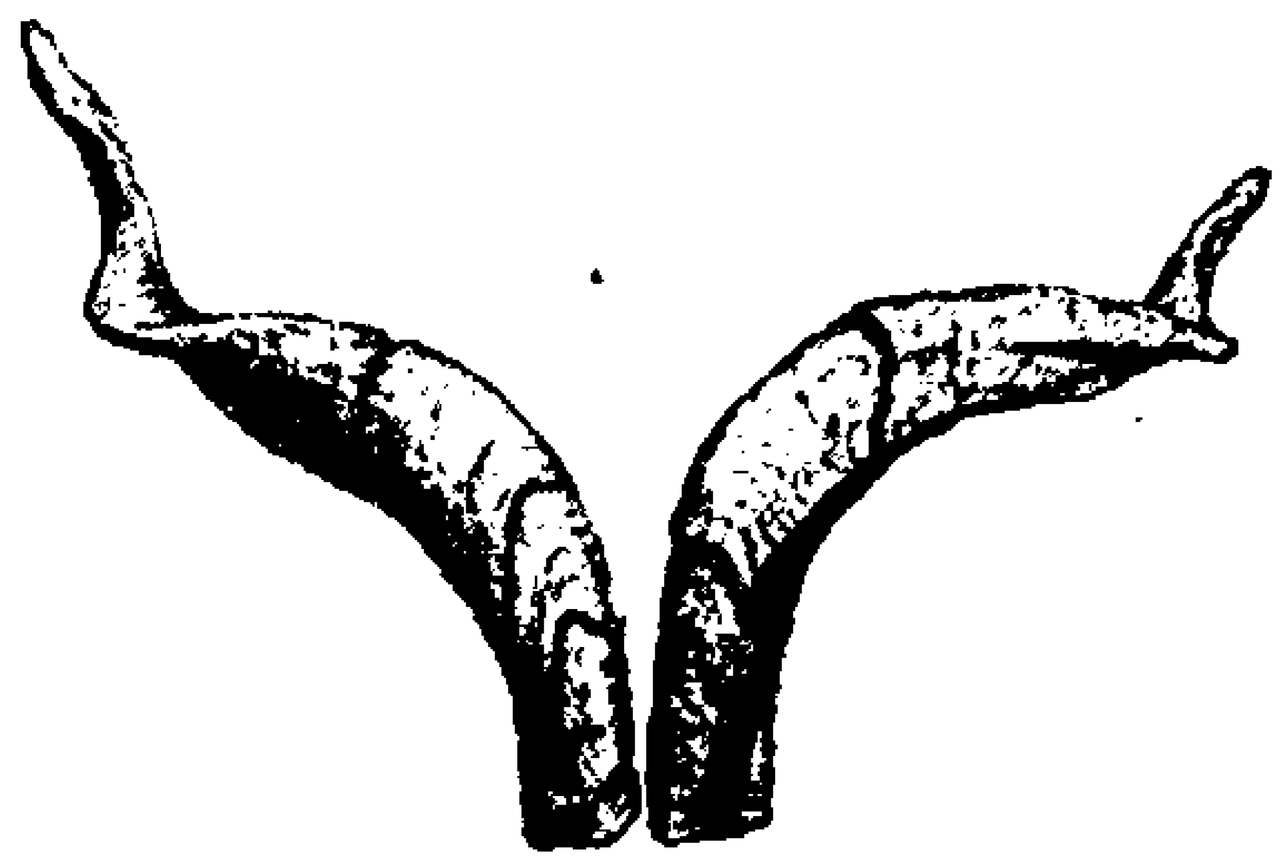
Perseverance combined with good management always brings luck in the end, but big bags of really fine markhor are not to be expected; one fair chance for each fortnight on the shooting ground is a good allowance.

It is always a pretty sight seeing markhor move down to their feeding ground in the evening from the crags above where they have been lying during the afternoon. Full gallop they come, sending the stones whizzing in front of them, over the most break-neck ground as if it were a level plain; rearing up on their hind legs and butting at one another, a venerable old fifty-incher probably playing with his great-grandson, a young spark of only twenty; the whole lot of them thoroughly enjoying the frolic. Ibex will play, and prettily too, but no beast appears so thoroughly to enter into the fun of a good skylark as a markhor. The master buck of the flock, however, seems to keep the youngsters in pretty good order. The writer was much amused once, watching a flock coming down a particularly difficult cliff. The best buck led the way, the flock following in single file soberly enough, the ground apparently was not safe even for a markhor to frolic on; turning a corner, the old fellow came to a wall of rock that,

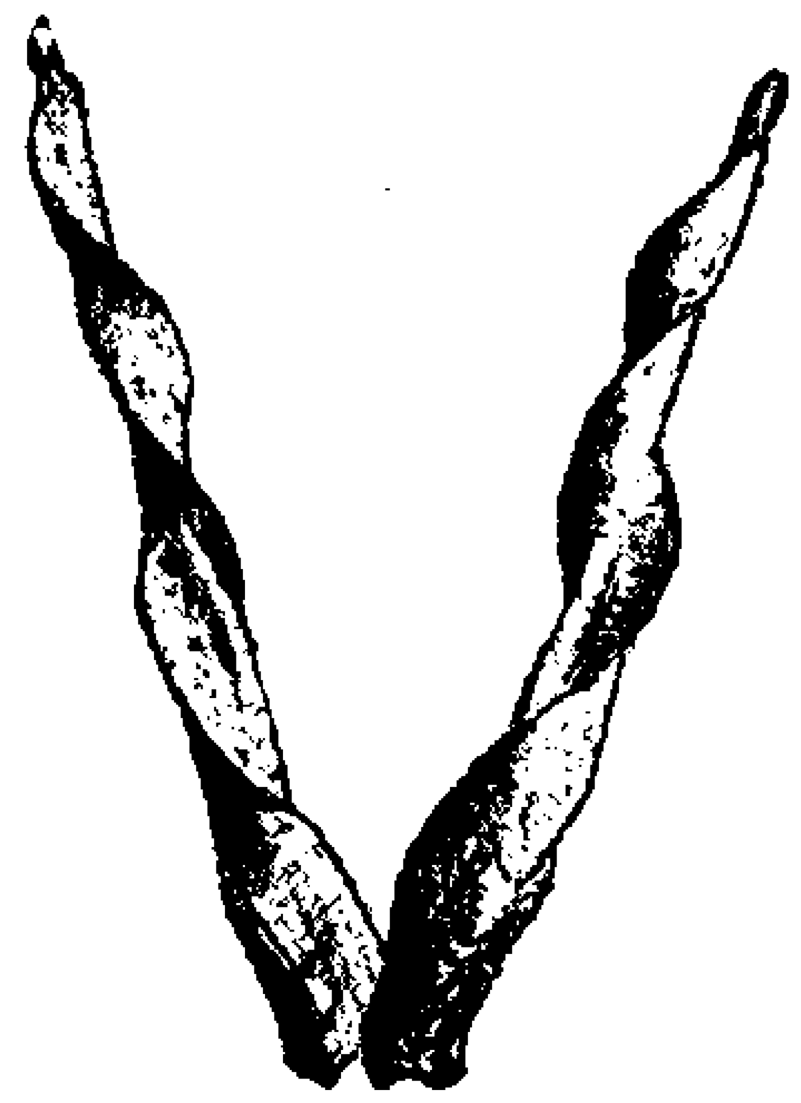
after careful inspection, he did not think good enough to descend, and he turned back to take another route. Just as he made up his mind, one of the smaller bucks in rear evidently chaffed him. The old fellow went for him at once, drove him right up to the edge of the cliff with his horns, as nearly as



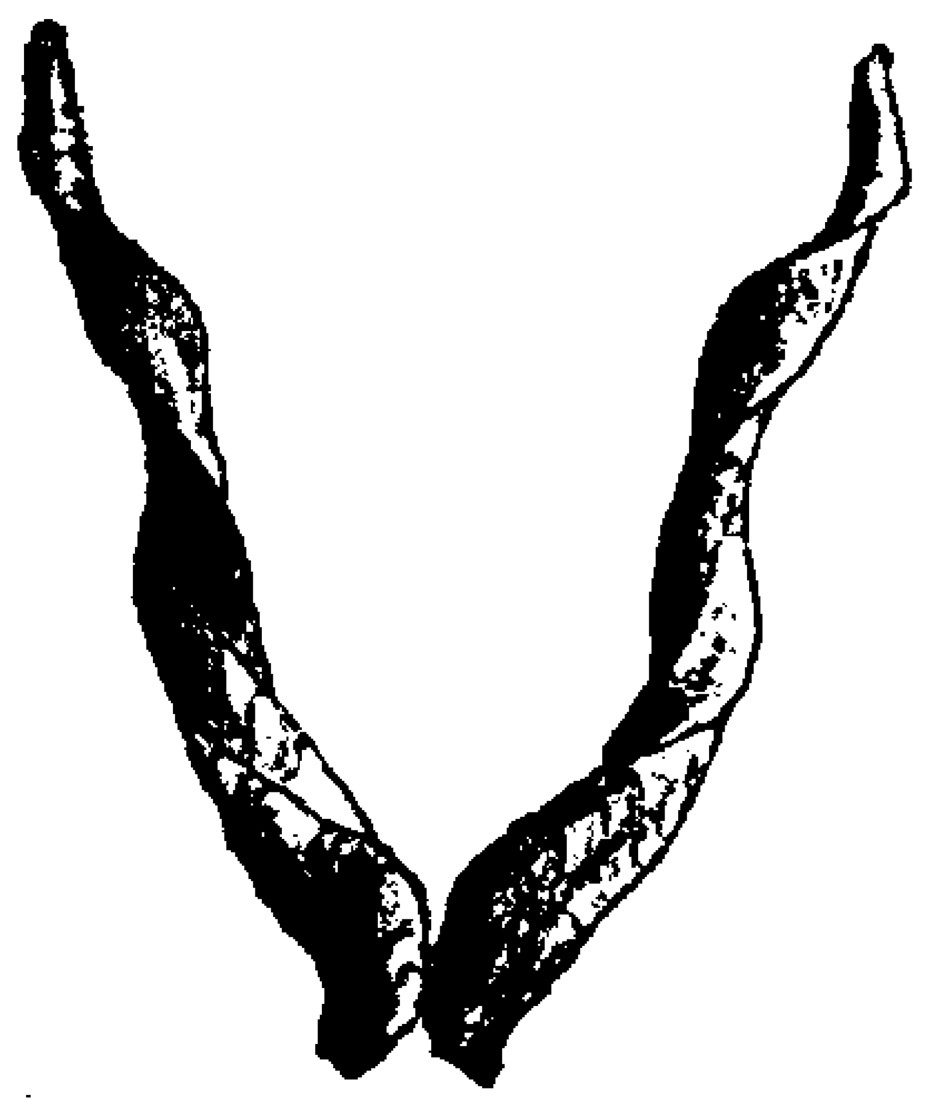
1. Cashmere



2. Astor



3. Trans-Indus



4. Afghanistan

Varieties of markhor

possible pushed him over, and then, with an air of great importançe, led the flock round his own way.

Hitherto most writers have divided markhor into only two varieties, viz. the spiral and straight horned; but the type of horn obtained in Astor is so different from that in Cashmere, and again that in Afghanistan from that in the lower Trans-Indus ranges, that any sportsman can distinguish them at a glance.

The writer has consequently adhered to Colonel Kinloch's theory, that there are four distinct varieties of this goat, classifying the two spiral types under the name of *Megaceros*, and the two straight-horned types under that of *Jerdoni*. In the British Museum the name *Falconeri* is applied to all four.

The first variety of *Capra megaceros* is that found in Cashmere on the Pir Punjal and Kajnag ranges; its horns make occasionally three complete spirals, whereas the horns of the second or Astor variety rarely have more than one; and as the horns are measured along the curve, it follows that a 40-in. horn from Astor is far bigger than one of the same length from Cashmere. The Astor markhor is also a larger animal than the Cashmere one, often measuring a couple of inches higher at the shoulder.

As regards habits, the Cashmere markhor is a thoroughly forest-loving beast. He will come out to eat the young grass on the upper slopes of the hill, but his real home is among precipitous cliffs in the middle of forest, and well worth watching those cliffs are when the sun first comes out after heavy rain. If there are any markhor about, they are pretty sure to appear and sun themselves.

The Astor variety, on the contrary, live almost entirely in the open, only taking to the strips of forest when driven there by the gadflies in the summer. In the winter they come down to the cliffs overhanging the main streams, working up about May, till they join the ibex, who never seem to leave the higher ground. In June both ibex and markhor may be seen feeding together. The writer saw a combined flock of nearly one hundred beasts, male and female, in the amphitheatre at the head of the Dashkat or Datchnar valley. Stalk them? Of course we tried, in spite of the long odds against one with a flock of that size. There was a ravine leading up towards them, which we reached all right by crawling on hands and knees through some thick low scrub; then we crept up the ravine till it died away into open ground and found ourselves planted within three hundred yards of the head of the flock, some dozen

buck markhor and ibex. There we lay for nearly an hour and a half hoping they would feed towards us, and a capital opportunity we had of comparing the relative size of the beasts; the markhor with his superior height and length making the ibex look quite cobby in comparison. Of course an old buck markhor must needs feed ahead of the rest, well out of shot, get our wind, and lead the whole lot at a gallop back to the rocks on the far side of the basin. There the ibex stayed, but the markhor went clean away over the crest of the hill.

In the evening, while we were watching the ibex in the vain hope they would come down again, behold on the very line the markhor had left by in the morning three male ibex and another flock of markhor appeared descending into the basin. As the markhor were coming down at a good pace we started to cut them off. On came the markhor, which we recognised as a flock we had been hunting all the previous week on another part of the ground. A stiff climb took us near where we had last seen them, and creeping on the shikari who was in front came almost face to face with one, upon which the alarm call began to sound furiously. A run forward only brought the writer within sight of a pair of horns moving off about eighty yards away, but while pushing on to get a shot, suddenly the buck that had convinced us as to the identity of the flock by his upright horns, came into full view broadside on at fifty yards. He rolled over stone-dead to the shot, and as he was lying doubled up with his head underneath him a gun-carrier was sent down to him, while I ran on fast to try for another shot. The rest of the flock, however, had vanished, and as the chase was abandoned a noise was heard; looking round, the spectacle presented itself of the beautiful 50-in. markhor (such was the first impression; in reality it was not quite forty) slipping from the clumsy Cashmeree's hands, rolling down the slope over one precipice, then over another, and lodging by the greatest luck just on the top of a third; the horns were sadly scarred and chipped, but were fortunately not broken. Many

heads of both markhor and ibex get utterly spoilt in Astor by the animals falling over cliffs when shot.

As regards *Capra Jerdoni*, the straight-horned markhor, the first variety, with a perfectly straight axis to the horn, is found all over the low ranges that run parallel to the right bank of the Indus below Attock ; it used to be found in fair numbers near Sheikh Budin, a small station near Dera Ismail Khan, and in the hills, or rather the steep ravines, in the plateau behind Dera Ghazi Khan. The country beyond these places belongs to more or less inhospitable tribes and, for the present at all events, is practically closed against the sportsman. Near Quetta markhor are reported to be obtainable, and in Beluchistan there should be a chance of getting *Capra ægagrus* and *Ovis Blanfordi* as well as *Capra Jerdoni.* Hunting straight-horned markhor is scarcely a summer amusement, as the heat is terrific on the low hills, and drinkable water is extremely scarce.

The second variety is found in Afghanistan, another practically closed shooting ground. It appears to be a link between the straight horn and the spiral, more generally approaching the spiral in size of body and general appearance. As the Astor variety probably extends some distance to the west of Gilgit, and this second variety is found in Northern Afghanistan, it seems possible that its corkscrew bend may be more pronounced towards its eastern limit and less so as it extends to the south-west. The illustration on p. 312 gives the four marked types.

Kinloch notes that markhor horns twist the reverse way to those of domestic goats ; and the writer, after looking at many hundreds of tame goats in India for the express purpose of studying their horns, and after inspecting the heads in the British Museum and other collections, is able to confirm the fact that the horns of all wild animals that twist at all do so outwards, while those of tame animals appear invariably to twist inwards.

Measurements

Authority	Height at shoulder	Weight as shot	Horns round curve	Straight	Girth at base	No. of spirals	Span at tips	Remarks
			CAPRA MEGACEROS					
			No. I. *Cashmere*					
	ins.	lbs.	ins.	ins.	ins.		ins.	
Col. Cuppage	..	..	63	..	..	..	..	
Major Ward	..	..	59	..	..	..	..	'Sportsman s Guide to Ladak, &c.'
"	..	..	56	..	..	..	..	" " "
Major FitzHerbert . .	..	..	55½	..	..	..	..	
Major Ward	42	..	53	..	9½	2½	26	'Sportsman's Guide to Ladak &c.'
"	..	..	48½	..	..	..	..	" " "
Col. Kinloch . . .	44	..	47½	..	..	..	..	'Large Game Shooting.'
Major Ward	..	..	47	..	..	..	..	'Sportsman's Guide to Ladak, &c.'
Capt. H. Brooke . . .	..	..	45	..	..	..	..	
Major Ward	..	..	43	..	11	2½	31	'Sportsman's Guide to Ladak, &c.'
Col. Kinloch	..	..	41	..	..	..	..	'Large Game Shooting'
"	..	..	40	..	..	..	..	" "
Average of good head .	..	..	40	..	11	..	..	
			Not classified					
Mr. A. O. Hume . . .	..	..	A 54½	..	10¼	..	26½	Rowland Ward, 'Horn Measurements'
Mr. M. Kennard . . .	..	..	A 54	..	10¾	..	33¾	" " "
Sir V. Brooke . . .	..	..	B 53¼	42½	11½	..	52	" " "
Mr. R. Ward . . .	..	..	B 53½	..	..	..	37½	" " "
Mr. A. O. Hume . . .	..	..	A 53	24¼	9¼	..	30¼	" " "
Mr. M. Kennard . . .	..	..	B 52¾	39¼	12⅛	..	33¾	" " "

A, probably Cashmere ; B, Astor.

No. 2. *Astor*

Major Ward	44	240	..	..	..	..	..	'Sportsman's Guide to Ladak, &c.'
,,	..	..	63	..	..	..	..	,, ,, ,,
,,	..	..	61	..	..	..	..	,, ,, ,,
,,	..	..	53	..	11	..	43	,, ,, ,,
,,	..	..	52	..	12½	..	43	,, ,, ,,
Capt. H. Brooke	..	..	49	..	..	..	..	
Major Ward	..	..	48	..	..	..	..	'Sportsman's Guide to Ladak, &c.'
The Writer	..	..	39½	..	13	..	..	
,,	..	..	38	..	14	..	..	
Average of good head	..	..	40	..	13	..	..	

Capra Jerdoni

No. 1. *Trans-Indus*

H.R.H. Duke of Edinburgh	..	..	..	38½	10½	..	23¾	Rowland Ward, 'Horn Measurements'
Major Ward	..	..	..	36	..	..	..	'Sportsman's Guide to Ladak, &c.'
Sir E. G. Loder, Bart.	..	..	47⅞	33	9¼	..	10¾	Rowland Ward, 'Horn Measurements'
Mr. A. O. Hume	..	..	..	32¼	9⅞	..	28	,, ,,
Col. Kinloch	..	..	..	32	..	..	..	'Large Game Shooting' ,,
Sir V. Brooke	..	..	45½	30⅞	8⅞	..	21½	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	30½	10¼	..	..	Skull, No. 120
Capt. H. Brooke	..	..	..	29	..	..	.	
Sir E. G. Loder, Bart.	..	..	39	27½	8¾	..	21	Rowland Ward, 'Horn Measurements'
Mr. G. Landseer, 'The Field,' 1873	..	..	..	25½	..	..	..	
Mr. A. O. Hume	..	..	..	25¾	8¾	..	21½	,, ,, ,,
Average of good head	..	..	..	24	10	..	..	,, ,, ,,

No. 2. *Afghanistan*

Major FitzHerbert	..	..	48	38	13	..	27	
British Museum	..	..	40	32½	12	..	..	Skull No. 121
Major Ward	..	..	..	35	..	..	..	'Sportsman's Guide to Ladak, &c.'
Average of good head	..	..	40	30	12	..	..	

XXXVII. IBEX (*Capra sibirica*)

Cashmere, '*Kale*'; *Ladak*, '*Skeen*'; *Pangi and Lahoul*, '*Tangrol*'

Ibex vary very much in colour according to age, locality and the season. In their winter coats the old bucks, though looking almost white at a distance, and showing up conspicuously among

In his summer coat

the brown young bucks and females, are really very patchy looking at close quarters, the head and part of the neck being a sepia brown, the middle of the body generally yellowish white with a dark stripe on the back, and the quarters again brown, with legs of dark sepia. In the summer they are sepia-coloured all over, the head and neck often darker than the body

—in fact, an old buck looks sometimes almost black at a distance; the beard is thick and very dark brown.

Ibex are to be found pretty nearly everywhere in the higher ranges of hills from Gilgit to Spiti, though they do not appear to cross the Sutlej to the eastward of Spiti. To name a particular valley would be only misleading. Favourite districts soon get shot out as regards good heads, and the only trustworthy information to work on is that of the year previous. If you get a good nullah, there is no sport in the Himalayas more charming. Parts of the ground no doubt will test your nerve as a cragsman, but it does not entail the perpetual climbing of markhor and ther ground, and in April, May and June a fair number of good chances may be relied upon. As Ward says, 'Patience and steady shooting are what are necessary; a man does not require to be a first-rate walker or a really brilliant shot during that season; but he does require to be enduring, and not too eager about getting up at once to his game.' Of course, if the sportsman blazes away at indifferent heads he will not get the big ones; but if he sees a good head one day and cannot get it, if he does not disturb the beast, he will see him again next day somewhere near the same place, and sooner or later be able to close accounts with him; ten heads, all over thirty inches, which would probably include two or three over forty inches, would be a far better bag for two months' work than twenty heads in the same time, including a lot of rubbishy little things about twenty-five inches.

If you wish thoroughly to enjoy your stalk, and the ground is not too difficult, insist upon going first and making your shikari carry your rifle behind you. He will probably object, but be firm, and listen to none of his plausible arguments; carry out your own stalk without asking his advice, simply telling him what you mean to do. When you are within two hundred yards of where you expect to get your shot, make him lie down, take the rifle from him and go on alone. Warn him beforehand that if he moves till you tell him, you'll fine him.

When you reach your place, get your wind before you look over; you will see perhaps fifteen or twenty ibex in front of you; don't be in a hurry; make sure that you have really selected the best head for your first shot, and take pains to get it home. When you fire, the smoke will hang in your eyes, and you will dimly see the flock scatter. Keep your head now—don't show yourself; and if you are in about the right place, a little above, but nearly on a level with the flock, and about eighty yards off, not closer, you will probably see the flock walking up the hillside, occasionally turning round to gaze at the 40-incher lying dead below them. With cartridges handy, and steady shooting, you should add the next two or three best heads to your score. You have no shikari at your elbow nudging you, and whispering advice just as you are going to fire, starting off the flock by showing himself immediately after your first shot, and finally, when you have got all the heads you care for out of the flock, imploring you to shoot a worthless little brute for the coolies to eat. Call him up when you have finished, and let him cut the throats of the slain to make them lawful eating, low down the neck, so as not to spoil the skin for stuffing, and if he objects, tell him he may do without meat. One of the greatest mistakes that all shikaries make in stalking is trying to get too close to the game. It stands to reason, in a country infested by leopards or ounces, that if a beast catches sight of the top of one's head within five and twenty yards, he will bolt at once, whereas at eighty yards distance he feels at all events safe from a sudden rush, and will stop to gaze.

After the end of June it is practically waste of time trying for ibex. There is grass everywhere, and to escape the gadflies and be out of the way of the flocks of sheep and goats that are driven up into many of the best nullahs in summer, the ibex retire to the highest peaks in the neighbourhood, and rarely descend to ground where there is any chance of getting near them.

XXXVIII.—THE IBEX OF PERSIA AND SINDH (*Capra ægagrus*)

Native names: 'Pasang,' male; 'Boz,' female; generally Boz Pasang in Persia (Blanford); Kayeek in Asia Minor (Danford)

This ibex extends from the Taurus mountains in Asia Minor, through the Caucasus range and Persia, to Afghanistan, Beluchistan and Sindh.

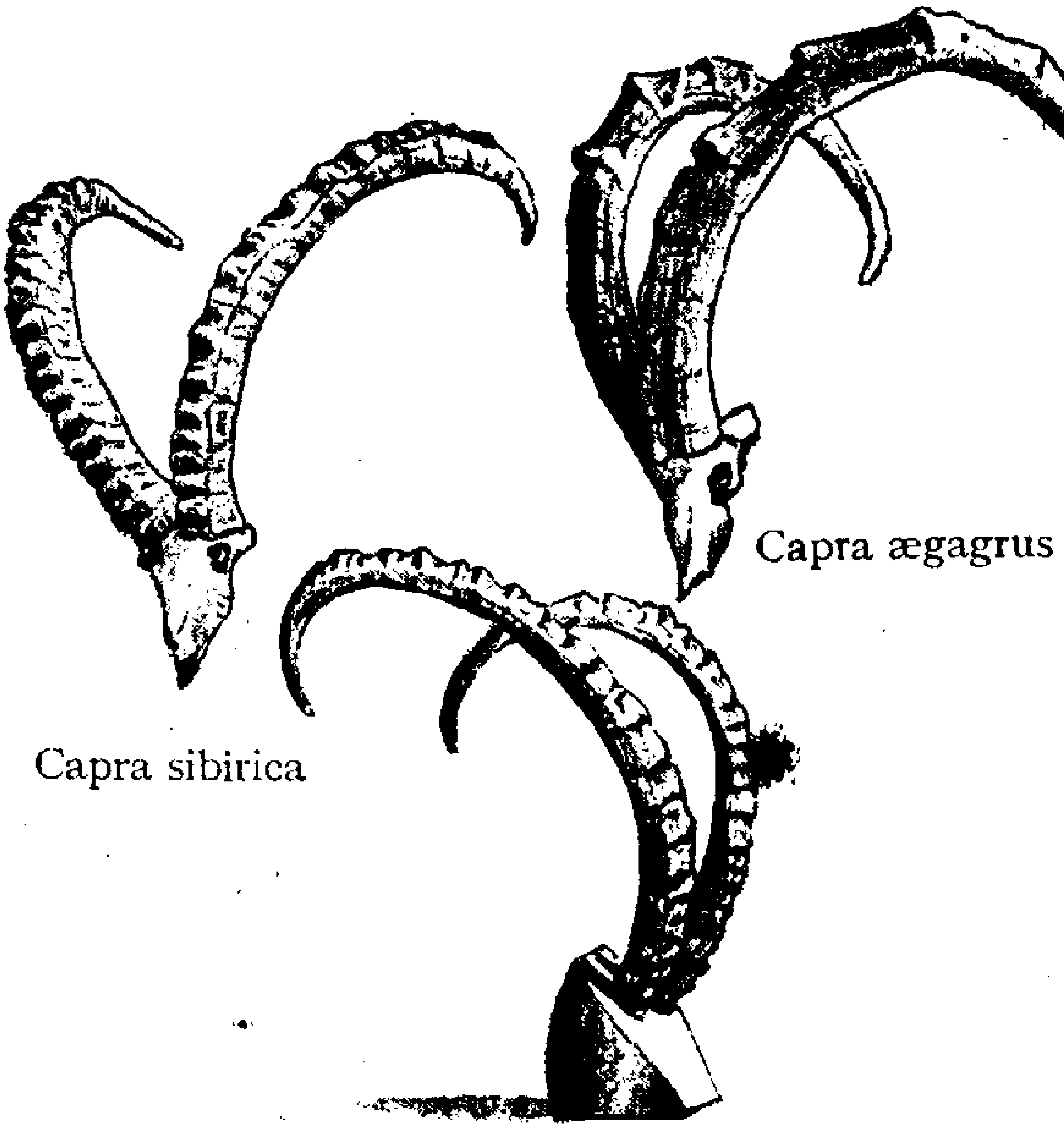
It is a smaller animal than the Himalayan ibex, and does not ascend to the same altitude, preferring, according to Mr. Danford, elevations of 2,000 to 5,000 ft., while 8,000 ft. is about the lowest limit of the Himalayan variety. In Beluchistan and Afghanistan these ibex and *O. Blanfordi* are found on the same ground, just as *Capra Jerdoni* and *Ovis cycloceros* are in the Suleiman range; and this peculiar trait of preferring hot low hills is, in the writer's estimation, the great point of difference between *Capra ægagrus*, *Capra Jerdoni* and *Ovis cycloceros* on the one side, and *Capra sibirica*, *Capra megaceros* and *Ovis Vignei* on the other.

The general colour of the buck *Capra ægagrus* is brown with a dark line down the back, and a black beard, but the last is not so profuse as in *Capra sibirica*. The females are lighter in colour, and have small horns. The horns are quite different from those of any other species of ibex; instead of having a flat front and being thinner behind than in front, as most other ibex horns are, these horns have the edge in front, a scimitar-like ridge running up the front of the horn, wavy but unbroken for about one-third above the head, and then represented by knobs which spring up at some distance apart for about another third, when the ridge appears again, but rapidly dies away towards the point. The sides of the horn too are smooth, the outer side rounded and the inner flat, the knobs not running down the sides as in other ibex.

In Persia and Afghanistan these ibex are generally shot in drives. The members of the Afghan Boundary Commission had a great day with them.

In the Sinaitic Peninsula they are replaced by *Capra sinaitica* vel *nubiana*, which extends through Egypt. Few people looking at the hills that run down to Suez harbour would imagine that they hold ibex, but such is the case nevertheless. The horns of this type are more like *Capra sibirica*, being quite as long, but thinner and more curved.

The European ibex, *Capra Ibex* of the Tyrol, has also horns



Capra sinaitica

like *Capra sibirica*, and nearly as thick, but shorter. His beard, however, is only rudimentary.

The Spanish ibex, *Capra pyrenaica*, on the other hand, has a peculiar upward twist at the end of the horn that makes it look almost like a markhor. This type is described elsewhere.

Mr. Sclater gives two other varieties of ibex, *Capra caucasica* and *Capra Wali*. The Senckenberg Museum of Frankfort is believed to possess the only known specimens of this last type. Of it Dr. F. Richters, in charge of the Museum,

'WITH CARTRIDGES HANDY AND STEADY SHOOTING'

Measurements

Authority	Height at shoulder	Length, head and body	Tail	Weight as shot	Length of horns	Girth of horns	Remarks
CAPRA SIBIRICA							
	ins.	ins.	ins.	lbs.	ins.	ins.	
Col. Kinloch	about 40	..	..	..	..	..	'Large Game Shooting
,,	..	..	..	..	54	..	,, ,,
Major Ward	38	54	8	138	..	..	'Sportsman's Guide to Ladak, &c.
,,	..	..	..	208	..	..	,, ,,
,, (a female)	32	..	..	104	..	..	,, ,,
,,	..	..	..	..	52	..	,, ,,
Mr. M. Kennard	..	..	..	..	51½	..	Rowland Ward, 'Horn Measurements'
Mr. Blyth, 'Proc. Zoo. Soc.,' 1840	..	..	..	..	51¼	10½	,, ,,
Sir V. Brooke	..	..	..	..	51	9⅛	,, ,,
Major Ward	..	..	..	..	51	..	'Sportsman's Guide to Ladak, &c.'
,,	..	..	..	..	50	11	,, ,,
,,	..	..	..	..	50	10	,, ,,
Capt. J. Brickley	..	..	..	..	50	9	Rowland Ward, 'Horn Measurements'
Sir E. G. Loder, Bart.	..	..	..	..	49¾	10⅜	,, ,,
Mr. M. Kennard, 1887	..	..	..	..	49½	10¼	,, ,,
Major Ward	..	..	..	..	49	11	'Sportsman's Guide to Ladak, &c.'
Mr. A. O. Hume	..	..	..	..	48½	9⅝	Rowland Ward, 'Horn Measurements'
Major Ward	..	..	..	..	48	12	'Sportsman's Guide to Ladak, &c.'
,,	..	..	..	..	48	10	,, ,,
,,	..	..	..	..	48	10	,, ,,
,,	..	..	..	..	48	10	,, ,,
Mr. A. O. Hume	..	..	..	..	47⅞	9⅛	Rowland Ward, 'Horn Measurements'
Mr. Rowland Ward	..	..	..	..	47½	10¼	,, ,,
Mr. C. Hagenback	..	..	..	..	47	11¾	,, ,,
Mr. M. Kennard	..	..	..	..	47	10½	,, ,,
Mr. Manners Smith	..	..	..	..	47	10	,, ,,
Major Greenaway	37½	..	..	..	..	..	
Major FitzHerbert	31	50	4	..	..	..	(A female)
Sterndale, 'Mammalia'	about 44	..	..	..	..	..	
Average of good head	..	..	..	..	40	10	

Measurements (continued)

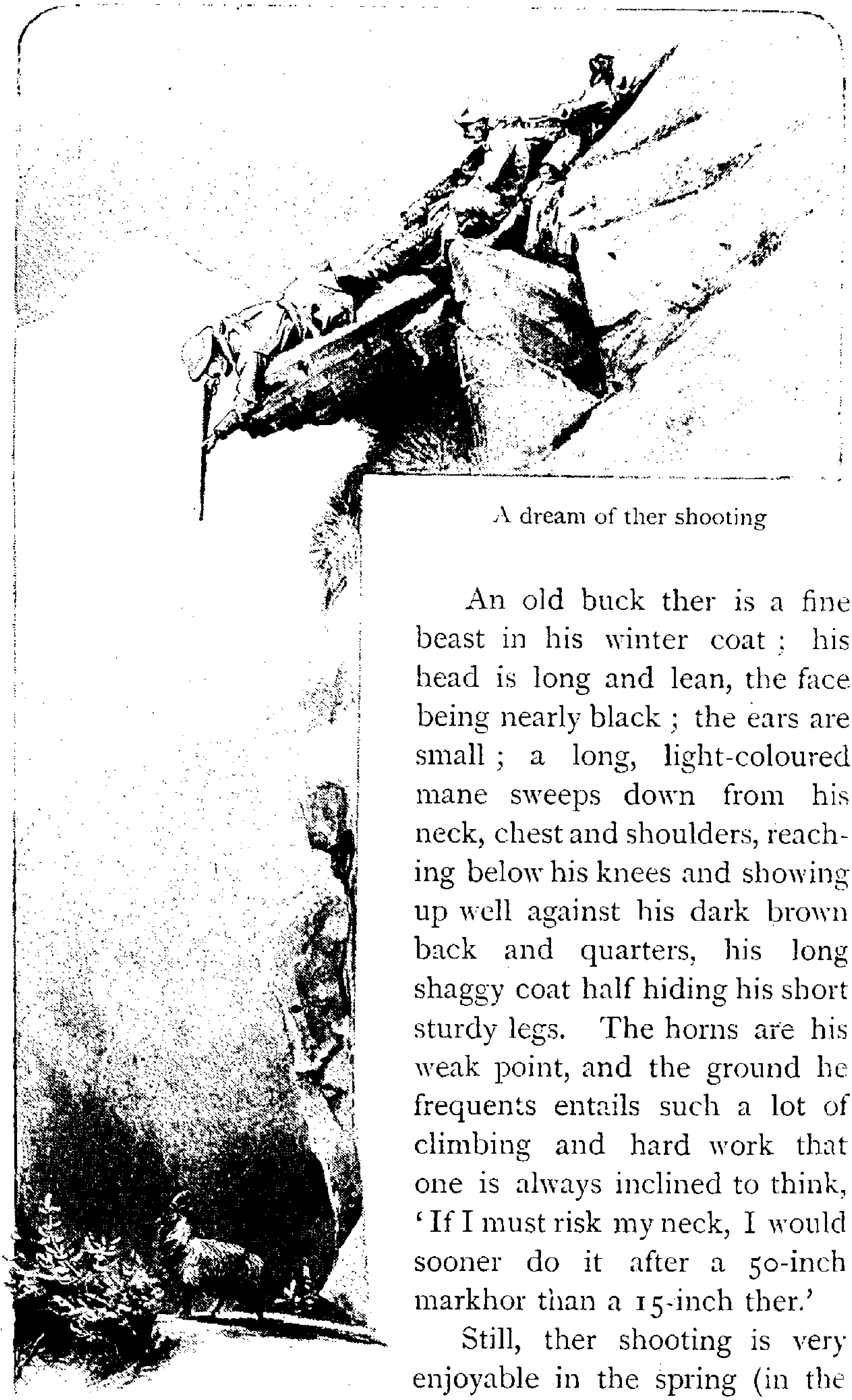
Authority	Height at shoulder	Length, head and body	Tail	Weight as shot	Length of horns	Girth of horns	Remarks
			CAPRA ÆGAGRUS				
	ins.	ins.	ins.	lbs.	ins.	ins.	
Col. F. Marston	..	..	..	..	53	..	Rowland Ward, 'Horn Measurements'
Mr. A. O. Hume	..	..	..	..	52¾	7⅞	" "
British Museum	..	..	..	..	48½	8½	(Skull No. 652 Ost. Cat.)
Mr. Danford	33½	65½	included	..	47½	9¾	Sterndale's 'Mammalia'
Capt. Townley Parker	..	..	..	..	45¼	9½	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	..	44½	8⅞	" "
Hume Collection, British Museum	..	..	..	..	44½	8⅜	" "
Mr. J. Carr Saunders	..	..	..	..	43½	9	Rowland Ward, 'Horn Measurements'
Mr. A. O. Hume	..	..	..	..	43¾	8⅜	
Sir E. G. Loder, Bart.	..	..	..	..	43	9	" "
British Museum	..	..	..	..	43	9	
			CAPRA IBEX (Tyrol)				
British Museum (skull No. 650A Ost. Cat.), a doubtful specimen	..	..	..	..	43¾, 41¼	10½	
Sir E. G. Loder, Bart.	..	..	..	..	31¼	9⅜	Rowland Ward, 'Horn Measurements'
Senckenberg Museum	..	..	..	..	30¼	9	(Cord, base to tip, 21¼ inches)
British Museum	..	..	..	..	27½	8¼	
Senckenberg Museum	..	..	..	..	24	9	(Cord, base to tip, 16½ inches)
			CAPRA SINAITICA VEL NUBIANA				
British Museum	..	..	..	..	51¼	7¼	(Skull No. 651 Ost. Cat.)
"	..	..	..	..	46	8	
Capt. Bartelott	..	..	..	..	42¼	9¼	Rowland Ward, 'Horn Measurements'
Capt. W. H. Besant	..	..	..	..	41¾	7⅝	" "
			CAPRA WALI				
Senckenberg Museum	..	..	..	..	24	9¾	(Cord, base to tip, 17 inches)

says: 'The horns of *Capra Wali* differ from those of *Capra sibirica* in the following points: the outer surface in *Capra Wali* is curved (smooth?), while in *Capra sibirica* it is corrugated. The under side of *Capra Wali* is sharper than in *Capra sibirica*. The inner side of *Capra Wali* has between every two knobs (on the top of the horn) five or six grooves, which correspond with a similar number of notches of equal depth on the under side. *C. sibirica*, on the other hand, has a fairly smooth inner surface, and on the under side has under every two knobs (on the top of the horn) a deep notch, and between every two deep notches a shallower one. The tip of *C. sibirica* is more curved than that of *C. Wali*. The horn of our specimen of wali has eight knobs on it, that of *C. sibirica* (horns 36¼ ins. in length, girth at base 9½ ins., cord from base to tip 22 ins.) 17 knobs.' The specimen came from Abyssinia, and its photograph shows the peculiar knob at the base of the horn on the forehead, its absence of beard, and its small size in comparison to *C. sibirica*, which is photographed with it.

XXXIX. THER (*Capra jemlaica*)

Gurwhal, '*Ther*,' *female* '*Theri*,' '*Tahr*,' *or* '*Jhula*,' *female* '*Tharni*'; *Chamba and Pangi*, '*Kart*'; *Cashmere*, '*Jagla*'; *Khistwar*, '*Kras*'; *Nepal*, '*Jharal*'

Ther are found at high elevations, where the forest line begins to give way to the snow throughout the southern slopes of the Himalayas, from Cashmere to Bhutan. Its north-west limit appears to be where the Jhelum river separates the Kajnag from the Pir Punjal ranges; though fairly common in the latter, it is apparently unknown in the Kajnag, nor is it found in the ranges to the north of the Cashmere valley; from the Pir Punjal it extends south-eastwards through Kishtwar and Chamba, then leaving Lahoul and Spiti to the north on to the upper waters of the Jumna, Ganges, and Aleknanda rivers, and so by Nepal to Bhutan, being most plentiful perhaps in Chamba and Gurwhal.



A dream of ther shooting

An old buck ther is a fine beast in his winter coat ; his head is long and lean, the face being nearly black ; the ears are small ; a long, light-coloured mane sweeps down from his neck, chest and shoulders, reaching below his knees and showing up well against his dark brown back and quarters, his long shaggy coat half hiding his short sturdy legs. The horns are his weak point, and the ground he frequents entails such a lot of climbing and hard work that one is always inclined to think, 'If I must risk my neck, I would sooner do it after a 50-inch markhor than a 15-inch ther.'

Still, ther shooting is very enjoyable in the spring (in the

autumn, when the beasts are in their summer coats, they are hardly better worth killing than bears at the same season), and a few days ther shooting, if it can be indulged in before proceeding after markhor or ibex, is the best possible tonic for one's nerves. The ground—rocky slopes covered thinly with pines and bushes—always looks more dangerous than it really is. The rock is sound limestone, and does not give way under one's foot; there is nearly always a friendly bush to hang to, and the very blades of grass are tough. The writer does not go quite so far as to confirm the statement of a merry sportsman—that he and two shikaris all hung on to one blade of grass while crossing a difficult bit; but it is wonderful how much weight that grass will support if only subjected to a steady strain.

There is also generally a variety of game to be shot from the same camp—gooral, kakur, black and brown bears, musk deer, markhor in the Pir Punjal, and burrel may often, according to the district, be combined with ther shooting; besides, there is always the 100 to 1 chance of a serow or leopard, and the writer even once came across a tiger within a walk of ther ground. It had killed a buffalo out of a herd close by, and actually walked through the camp one night, passing within a few feet of the tents.

Though ther are often found in large flocks, the big bucks are generally alone, and these solitary old males are particularly crafty and by no means easy beasts to come to terms with. Colonel Kinloch writes unkindly of the ther in respect of his high flavour; all wild goats smell, and whether it be markhor, ibex or ther, the stink of the last beast bagged always seems more appalling than any that one has experienced before, and is only surpassed by the next one. The 'bouquet' of ther and markhor, however, appears to fade after the head has been stuffed, but the scent of the ibex will cling to it still. The writer has some stuffed ibex heads that were obtained six years ago, and their aroma on damp days, though pleasing as a reminiscence of past sport, is hardly suited to the house.

Female ther are smaller than the males, have no mane, insignificant horns, and vary a good deal in colour, some being reddish-brown, others a yellowish-drab. They and the bucks in their summer coats have a conspicuous mark on the back, where the hair of what is the mane in the buck parts from the hair on the back. This is particularly noticeable when looking down on the beast from above.

XL. NEILGHERRY IBEX (*Hemitragus hylocrius*)

Native Names: 'Warra-adu,' 'Warri-atu'; Tamil (Sterndale) 'Kard-ardoo'; Canarese (Sanderson)

This wild goat is found in the Neilgherry range, and most of the higher hills in the south of India. It is not found in Mysore nor in Ceylon.

The old buck is of a dark sepia colour, with a light, grizzled saddle mark, lower parts paler brown, legs and face dark, and a short stiff mane on the neck and withers; the young bucks and females being lighter in colour. The horns much resemble those of the ther, *Hemitragus jemlaicus*, except that they are more ringed and sheeplike, and do not taper so rapidly. There is much the same difference between them on a small scale as between the horns of *Capra sibirica* and *Capra ægagrus*, the Neilgherry goat taking after the former and the ther the latter. The two beasts are much about the same size, and have, taking into consideration the different types of forest, much the same habits. In Madras the Neilgherry ibex, being the sole representative of the goat family, has an amount of importance attached to his pursuit which his Himalayan cousin does not enjoy, being crushed by the superior attractions of his mighty relatives the ibex and markhor. They are to be sought for in the same way, watching from above the grassy slopes among the cliffs at an elevation of 5,000 or 6,000 ft., and require the same careful stalking.

XLI. GOORAL (*Nemorhædus Goral*)

Generally,
'Gooral' or 'Ban bakri'; Chumba, 'Pij'; Cashmere, 'Nain,' 'Norn'

This is quite the most sporting of the minor beasts of the chase. It is pretty generally distributed along the whole of the lower slopes of the Himalayas from the Indus river to the Kachin hills in Burmah; horns of both gooral and serow were found by the Phunkan column in 1889. In Cashmere they are scarce, a few only being found in the Kajnag and Pir Punjal ranges, but from Kishtwar to the south-east they are pretty plentiful, especially in Chumba, Gurwhal, the Sewalik range, and the valleys of the Ganges, Jumna, and Tonse rivers. They seem indifferent to heat, and abound among the hot precipitous cliffs formed by the big rivers cutting their way through the hills, the Tonse seeming to suit their requirements admirably. Wherever a landslip has occurred, wherever there is a steep rocky slope covered with long grass and occasional bushes and pines, there gooral are sure to be found. Higher up the hills, up to about 8,000 ft. above the sea level, they are often seen on the short turf at the tops of the ridges or in the pine forests, but rocks they must have close to, and the more precipitous the cliff the more likely it is to hold them.

Wary as gooral are, they will often live close to villages, and do not mind the presence of flocks with their attendant shepherds, or hillmen cutting wood and grass near their haunts. They seem to trust to the steep broken ground they frequent for protection. Gooral, as a rule, are fairly easy animals to get a shot at, but they present by no means a large target, and are very tenacious of life; a wounded one will often tax the best nerves to follow. Gooral seem to become particularly attached to certain localities, and will stand a good deal of bullying and firing at before they leave the ground for good, and as they are to be found within easy reach from many of

the hill-stations, they afford pretty shooting to sportsmen who are debarred from hunting better game. Few men go out of their way to hunt gooral, but it is very good fun all the same, and first-class practice both in climbing and shooting.

Buck gooral are generally found alone or with one other companion; if four or five are seen together, they are almost invariably does and young ones. It is nearly impossible to distinguish the sexes at any distance, one rarely gets a fair view of the beast to begin with; the horns are well nigh invisible, except against the skyline, and even if seen are hardly any guide, as both sexes carry them, the buck's horns being only longer and thicker; and it requires the experience of a Tyrolese keeper, accustomed to chamois, to judge the sex from the shape of a beast half hidden in long grass or bushes. Native shikaris certainly never know.

Walking along a ridge or a hillside you hear a sharp hiss: up jumps a brown beast some fifty yards off, gallops twenty yards, and stands for a second to gaze; you fire, and it rolls down the hill; you climb down congratulating yourself—a clean kill!—a single beast—surely a real good head this time—but when you reach it, too often it is another luckless nanny. In chamois the buck is more heavily built than the doe, is darker in colour, and has a ruff of long black-brown hair along the back, but it takes years of practice to tell an old doe from a buck, especially in winter.

The general colour of gooral is a rich brownish-yellow tipped with sepia, and there is a conspicuous white patch on the throat which is more recognisable in the buck than in the doe, and is really, if it can be seen, the best guide in distinguishing the sexes. General Macintyre mentions an albino gooral.

Though gooral seem fond of heat, they do not like being out in the sun, and this fact is a decided convenience to the sportsmen, the shady side of the hill being both pleasanter and more profitable to work over.

Gooral may occasionally be driven, but far the pleasantest

and most sportsmanlike way of hunting them is to walk slowly along the top of a ridge, carefully examining every ravine and patch of likely ground. Where gooral are at all plentiful it is almost impossible to take too much pains. The beasts often lie down under overhanging boulders and turn up suddenly in the most unexpected fashion on ground where you thought you had examined every inch, and as surely as you become careless so surely will you hear a hiss and see a beast dash down the hill at whom you might have got an easy shot had you not relaxed your attention.

The comparative measurements of European chamois are given by Colonel Howard as follows:

Good bucks weigh from 45 lbs. to 60 lbs. broken up. Extraordinary ones reach 70 lbs. and over.

Length of horn	Perpendicular measurement	Girth	Splay
ins.	ins.	ins.	ins.
$11\frac{1}{4}$	$7\frac{3}{4}$	$3\frac{1}{2}$	$6\frac{1}{2}$
$10\frac{3}{8}$	—	$3\frac{1}{2}$	4

These two heads are exceptionally fine; the two next heads are good, but not extraordinary.

Length of horn	Perpendicular measurement	Girth	
ins.	ins.	ins.	ins.
$9\frac{1}{4}$	—	$3\frac{1}{4}$	$6\frac{1}{4}$
$9\frac{1}{4}$	$6\frac{1}{2}$	$3\frac{1}{2}$	4

There are two more varieties of gooral in the British Museum: the long-tailed gooral from China, which is about the same size as an Indian gooral, but rather more yellow in colour. It has a tail of long brown hair reaching to its hocks, that of the one in the British Museum measuring 17 ins. to the tips of the hair. The Japanese gooral is a delightful beast, and exactly what one would expect from such a quaint country. Its coat is

like that of a Langour monkey, long, soft, grey hair, tipped with brown; it has a white ruff on its throat and cheeks, a brown face, and rather rounded brown ears—altogether it looks like a goat-monkey. The horns are the same shape as those of the Indian gooral.

XLIII. SEROW (*Nemorhœdus bubalinus*)

Gurwhal, '*Serow*'; *Sutlej Valley*, '*Imu*'; *Cashmere*, '*Ramoo*,' '*Halj*,' '*Salabhir*;' *Chamba*, '*Goa*,' '*Jhangal*'

The serow is a heavily built, awkward looking animal, intensely ugly, suggesting a cross between a donkey and a cow, with a wild-looking bristly black mane, large coarse ears, horns like those of a gooral, only bigger; its general colour is black on the back and head, the muzzle being dirty white; the sides, fore-arms and thighs are of bright red clay colour, the under parts and legs being white; when seen first, it looks all red and black, and its wild uncanny appearance accords well with the gloomy tangled precipitous ravines it frequents.

It is found thinly scattered along the whole of the southern slopes of the Himalayas, from Cashmere down past Sikkim, to the Burmo-Chinese frontier, but apparently does not cross the snowline, probably on account of absence of forest on the northern side. Precipitous rocks and their accompanying caves it likes, but forest it must have, and the thicker and more tangled the better. A gloomy damp ravine below a waterfall, the sides mere walls of rock and the bed choked with rank vegetation, is the place where its tracks are oftenest found. The beast itself is rarely seen. It appears to live generally alone; a female with a three-quarter-grown young one may be found together, but rarely two full-grown beasts. Major Greenaway saw three serow in one day, in the Sindh Valley in 1871, two of them together, and one alone, and got shots at all of them, but only bagged one. But this was exceptional luck. Most men who have shot for some years in the hills, have seen one or two serow, but rarely more, and getting a shot at one is generally

looked upon as a lucky fluke. Besides being scarce, serow are uncommonly wary, and are said by natives to travel for miles if disturbed.

Colonel Kinloch is one of the very few people who have laid themselves out to hunt serow, and his experiences are scarcely encouraging, though Ward says that in the winter months serow can be found with comparative ease in the Sindh Valley, in Cashmere. The serow seems, like sambur, to be

The serow gallops down hill

nocturnal in its habits, and its discordant scream is often to be heard after dark in Gurwhal, where it is comparatively plentiful.

The serow's chief accomplishment is the way that he can gallop down a steep hill, and as he invariably takes that course when disturbed, he can be easily driven, provided the ground is well known. All writers agree that a wounded one will charge. Kinloch mentions having heard of an unwounded male charging when its mate was shot, and Ward gives a graphic

account of an adventure he had with one. Mr. O. Shaw shot a serow with a white mane in Cashmere. There are two more varieties of this capricorn described in Sterndale's 'Natural History of India.' The first is the Arakanese capricorn, found in Arakan, Pegu, the Malayan Peninsula, and Sumatra.

This is a brown beast with a yellow bay throat, black fore-legs, and bay hind ones. The description is rather vague, and Blyth's note—'This species varies much in colour from red to black, and the black sometimes with a white nape, or the hairs of the nape may be white at the base only'—does not explain matters very clearly to an unscientific reader. The second variety is the Thibetan capricorn, discovered by Abbé David, in Eastern Thibet.

This differs from the Indian serow by the uniform blackish brown of the upper parts, tending to ferruginous on the thighs, and the red colour in place of the grey on the lower parts of the legs.

XLIII. TAKIN (*Budorcas taxicolor*)

Native name: 'Takin,' 'Takhon'

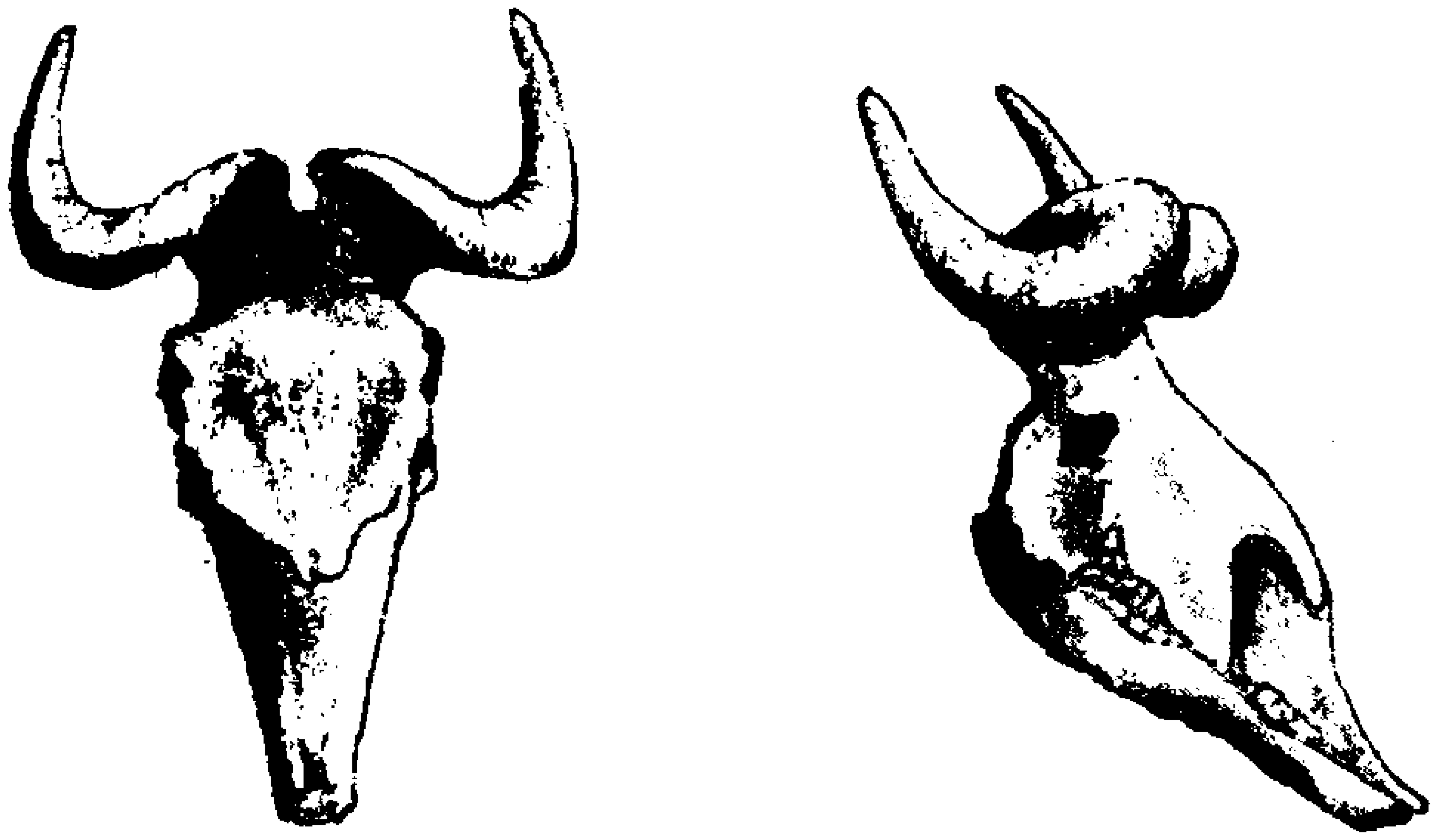
This curious animal, which is found just outside British limits in the Mishmi and Akha hills, north of Assam, and in Eastern Thibet, is a kind of large serow; but its horns, instead of being sharp upright spikes like those of the serow and gooral, are more of the bovine type, being rounded, smooth, and with the distinctive wrinkles and longitudinal marks of genus Nemorhœdus faintly defined. Their peculiar twist is best explained by the accompanying sketch.

An article in Sterndale's 'Mammalia of India,' signed 'J. C.,' thus describes the animal:

The takin is a large, heavily built ruminant, about 3 ft. 6 ins. high at the shoulder, and 6 ft. in total length. The external peculiarities of the animal are: first, peculiar angularly curved horns in both sexes; second, the enormously arched chevron; third, the very great development of the spurious hoofs, which are obtusely conical, and about 1½ in. in length in a small specimen.

Old bulls appear to become of an uniform brownish black at times, but the colour doubtless depends on the season, as each hair has the basal two-thirds yellow, and its apical third black, and the young its hair brown with a dark tint.

The animal would appear to range from about 8,000 ft. to the Alpine region, which is stated to be its habitat.



Budorcas taxicolor

As this animal has been found by the Abbé David in Chinese Thibet, future explorations to the north of Burmah should furnish skeletons and details about its habits for the advancement of science.

There are two skulls in the British Museum in which the prominent chevron is particularly noticeable; and there are also several stuffed specimens.

XLIV. THIBETAN ANTELOPE (*Pantholops Hodgsonii*—STERNDALE, KINLOCH); (*Kemas Hodgsonii*—WARD)

Cashmeree shikaris know it as 'Heran.' The Ladak name is 'Chiru,' or 'Choos'

This rather curious antelope is pretty plentiful in the Changchmeno Valley, the only easily accessible place for European sportsmen where it is found. A few are said to have been shot in the neighbourhood of the Mansarovárá Lake, near the North-

Measurements

Authority	Height at shoulder	Total length	Weight as shot	Length of horn	Girth at base	Sex	Remarks
			CAPRA JEMLAICA				
	ins.	ins.	lbs.	ins.	ins.		
Mr. A. O. Hume	..	..	..	14⅛	8⅞	..	Rowland Ward, 'Horn Measurements'
Major Ward	..	..	200	14	..	..	'Sportsman's Guide to Ladak, &c.'
Mr. Gwynne Griffiths	..	..	..	13⅝	9	..	Rowland Ward, 'Horn Measurements'
The Writer, 1884	..	..	..	13⅝	..	..	
Hume Collection, British Museum	..	..	..	13¾	9	..	Rowland Ward, 'Horn Measurements'
Mr. A. O. Hume	..	..	..	13¾	8⅜	..	,, ,,
Hume Collection, British Museum	..	..	..	13⅝	8	..	,, ,,
British Museum	..	..	..	13½	8⅞	..	,, ,,
Mr. Rowland Ward	..	..	..	13½	8½	..	,, ,,
,, ,,	..	..	about 200	..	..	..	,, ,,
Hon. W. Rothschild	..	..	..	13⅝	9½	..	,, ,,
Mr. A. O. Hume	..	..	..	13¼	9¼	..	,, ,,
Sir V. Brooke	..	..	..	13¼	8⅞	..	,, ,,
Sir E. G. Loder, Bart	..	..	..	13¼	8¼	..	,, ,,
Mr. J. Carr Saunders	..	..	..	13⅛	9⅛	..	,, ,,
Capt. H. Brooke	..	..	..	13	..	..	
Major Greenaway	41	52	..	12½	..	..	
,, ,,	36½	..	..	..	..	..	
Sterndale's 'Mammalia'	36 to 40	about 54	..	12 to 14	..	..	
Col. Kinloch	..	..	..	about 15	10 to 11	..	'Large Game Shooting'
Average good head	..	..	..	12	9	..	
			HEMITRAGUS HYLOCRIUS				
Gen. McMaster	..	..	..	17	9¼	..	Sterndale's 'Mammalia'
Mr. A. O. Hume	..	..	..	16¾	8⅞	..	Rowland Ward, 'Horn Measurements'
Mr. St. George Littledale	..	..	..	16½	..	..	,, ,,
Gen. McMaster	..	..	..	16	..	..	Sterndale's 'Mammalia'
Sir E. G. Loder, Bart.	..	..	..	15½	8⅝	..	Rowland Ward, 'Horn Measurements'

Mr. M. Kennard	..	..	..	15¾	8¾	..	
Mr. St. George Littledale, 1875	..	..	..	15¾	8½	..	" "
Mr. M. Kennard	..	..	..	15½	8⅜	..	" "
Mr. St. George Littledale, 1871	..	..	..	15⅛	8½	..	" "
Sterndale's 'Mammalia'	41 to 42	..	..	..	..	..	" "
Average of good head	..	..	..	12	8	..	

NEMORHŒDUS GORAL

Major Ward	28	..	58	8½	..	..	'Sportsman's Guide to Ladak, &c.'
"	28	..	63	8	..	..	
Hume Collection, British Museum	..	..	..	7¾	3¼	..	Rowland Ward, 'Horn Measurements'
Major Ward	28	..	59	7½	..	..	'Sportsman's Guide to Ladak, &c.'
"	26	..	..	7½	..	..	
Capt. J. A. Orr Ewing	..	..	..	7	3¼	..	Rowland Ward, 'Horn Measurements'
Mr. J. M. Nicolls	..	..	..	7	3½	..	" "
Col. Kinloch	about 26	..	..	up to 8	..	..	'Large Game Shooting'
Sterndale's 'Mammalia'	28 to 30	about 48	..	6 to 9	..	..	
Major Greenaway	26½	..	..	..	..	Female	
Average good head	..	..	..	6	..	..	

NEMORHŒDUS BUBALINUS

Major Ward	37	..	190	12	..	Male	'Sportsman's Guide to Ladak, &c.'
Hon. C. Ellis	..	..	..	10½	5⅜	..	Rowland Ward, 'Horn Measurements'
Capt. H. Brooke	..	..	..	10	5½	Male	
Major Ward	38	..	190	10	..	"	'Sportsman's Guide to Ladak, &c.'
"	33	..	120	10	..	Female	
Sir V. Brooke	..	..	..	9¾	5⅝	..	Rowland Ward, 'Horn Measurements'
Mr. R. Lydekker, British Museum	..	..	..	9⅞	5½	..	" "
Major Greenaway	..	..	..	9½	..	Male	
" "	..	..	..	7½	..	Female	
Major FitzHerbert	42	71	..	9¼	5½	Male	
The Writer	40	..	..	8	5	Female	
Sterndale's 'Mammalia'	about 36	60 to 66	about 200	9 to 14	..	..	

ARAKANESE CAPRICORN

British Museum, sex unknown, not full grown (the horns are of the ordinary serow type).	..	..	..	8½	5½	..	

Measurements (continued)

Authority	Height at shoulder	Total length	Weight as shot	Length of horn	Girth at base	Span at tips	Remarks
			BUDORCAS TAXICOLOR				
	ins.	ins.	lbs.	ins.	ins.	ins.	
British Museum	..	..	..	22⅜	10⅝	14¾	Rowland Ward, 'Horn Measurements'
Hume Collection, British Museum .	..	..	..	20⅞	11¾	11⅞	" "
Mr. A. O. Hume	..	..	..	20¾	11⅞	12½	" "
Hume Collection, British Museum .	..	..	..	20¾	9⅝	13¾	" "
Mr. B. H. Hodgson, British Museum	..	..	..	20½	10⅞	12⅜	" "
Sir E. G. Loder, Bart.	..	..	..	19⅜	11	15	" "
British Museum	..	..	..	18	10¼	8	" "
" "	..	..	..	16⅛	8¼	10¼	" "
Mr. B. H. Hodgson, British Museum	..	..	..	15¼	9¾	5¾	" "
Lieut.-Col. Graham	..	..	..	14⅜	8¾	8⅞	" "

Western frontier of Nepal, and they are also to be met with all over the lofty plateau which has to be crossed on the way to Yarkand. It appears, however, never to have been found in the district beyond the Niti Pass as far as Europeans have been able to penetrate, nor did Colonel Kinloch apparently meet with it when he crossed the frontier in the direction of Gártope.

The bucks vary a good deal in colour; some of them are a beautiful golden red, some a light fawn, and others a dirty yellowish white. The colour of the hair seems always to fade after the skin is removed. As a rule the skins are useless in the summer as the antelope are changing their coats; the legs and face are dark brown, and the muzzle, instead of being neat and deer-like, is broad and puffy. The horns are peculiar, having a considerable bend forward at the tips, as if they were pliable, and the buck was standing with his back to a gale of wind.

They have two greatly developed inguinal glands, the tubes of which run right up into the body, and the Tartars are said to believe that the antelope inflate these with air at will, to enable them to gallop faster. A curious point about this antelope is that though he can gallop, and very fast, he generally seems to prefer moving at a sharp trot.

As they are wary and require careful stalking, and as they often lie up for the day in holes, which they have a curious habit of scratching for themselves on the hillsides just deep enough to conceal the whole of their bodies and necks when lying down, leaving the eyes just peeping over the top, the best time to hunt them is when they are feeding in the morning and evening. They are rather soft animals, and succumb to wounds that most deer would travel miles with, the writer once broke the foreleg of a buck who after going about half a mile lay down with his nose on the ground, and let himself be caught. There was a pretty free fight for a bit when he was laid hold of, his sharp horns necessitating a certain amount of caution; a judicious wrench towards his wounded side, however, at length

upset him, and a knife-thrust finished him. A Tartar shikari, who was standing by, absolutely refused to lend any assistance during the struggle, contenting himself with applauding the combatants and seeing fair play. The does are smaller than the bucks, are of a light brown colour, and have no horns.

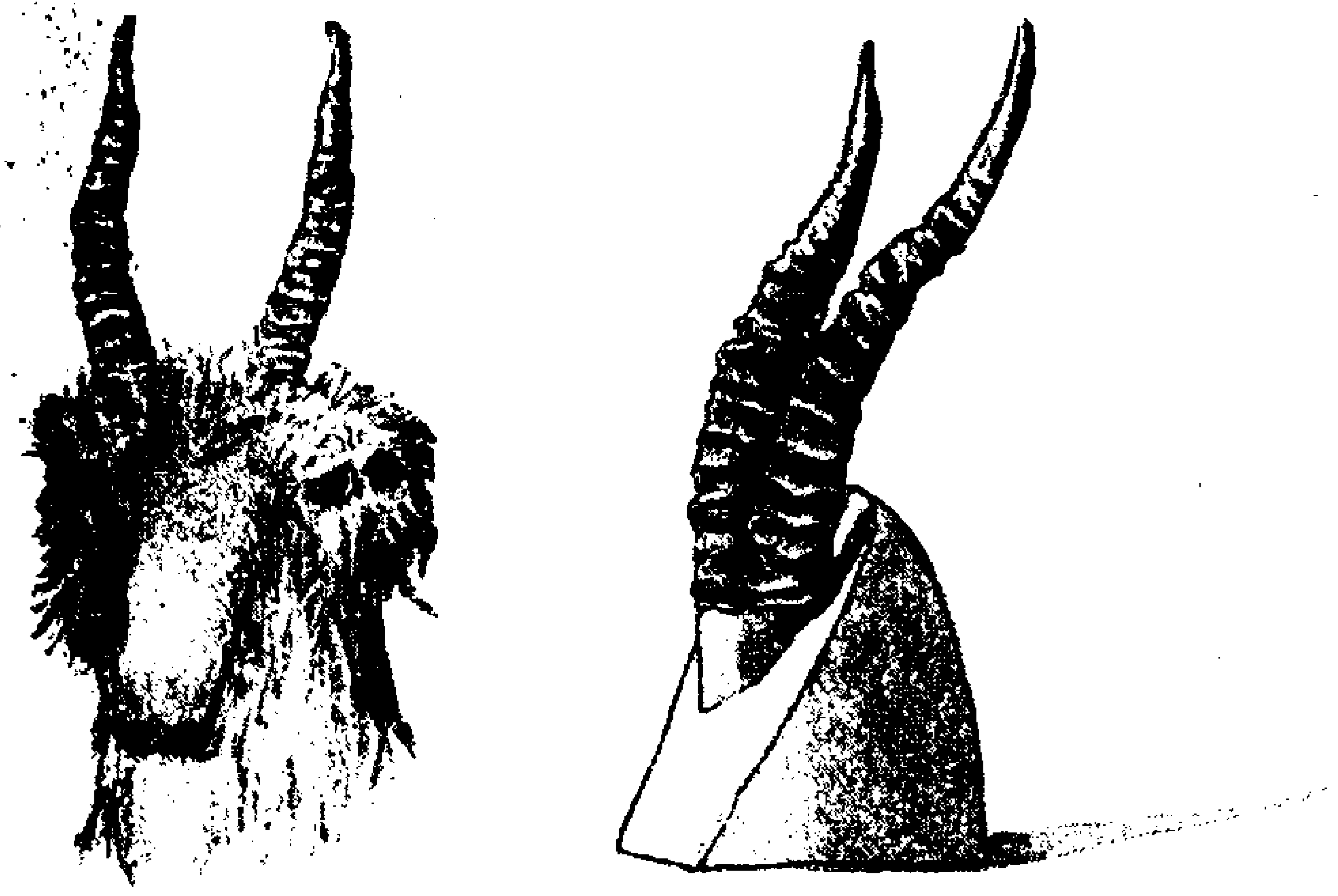
Unlike other antelope, the bucks separate from the does in the summer, and walk about in herds together. They are much worried by the grubs of some fly, which seems to annoy them chiefly when lying down during the heat of the day, for it is a common thing to see one of a herd get up, go for a constitutional gallop—they always gallop then—return to the herd and lie down again with the others. They do not seem to be troubled so much when moving about feeding. The venison in July is excellent.

XLV. THE SAIGA ANTELOPE (*Saiga tartarica*)

This extraordinary animal, which hails from Central Asia, is said to be a relative of the Thibetan antelope, on account of the peculiar formation of the nose. In the stuffed specimens in the British Museum there is little or no resemblance between the two; the Thibetan antelope having there, as in its natural state, a broad puffy muzzle, while the saiga antelope has, at all events in the Museum, in addition to a very high chevron, an absurd-looking elongated snout like a tapir, projecting far beyond its lower lip. The hair is thick and long, particularly on the cheeks, where it almost resembles a wild boar. The ears are small and rounded in shape, utterly unlike any deer's ears. The general colour is almost white (probably a very pale yellow in nature), and there is a dark stripe down the quarters and tail. The horns are annulated and of a very pale colour, the stuffed specimen having twelve rings; and though of the gazelle type, with a backward sweep, rising up again at the tips, they have also two curious outward bends, one near the base of the horn, and another near the tip, though the tips eventually incline inwards. A skeleton in the Museum measured 58 ins.

in length along the spinal cord, and stood 31¾ ins. at the shoulder. The stuffed specimen stands 30 ins. at the shoulder. Three pairs of horns measured 13¾ ins., 13½ ins. and 13 ins.

Sterndale remarks that the inflated nostrils 'are so much lengthened as to necessitate the animal's walking backwards when it feeds.' The fortunate sportsman who comes across this rare variety should therefore remember to post himself astern of a herd should he wish it to feed up to him—though he may possibly find that nature has provided the animal with



Saiga tartarica

means of twitching its nose out of the way to obviate so uncomfortable a method of grazing.

Gazella gutturosa

This is another little known variety. It is found in Mongolia, and is the one Ward refers to as the 'hwang yang, or yellow goat.' There is a stuffed specimen in the British Museum, which stands 31 ins. at the shoulder, is of a pale yellowish white, with coarse hairs, and has horns 10½ ins. in length, of the regular gazelle type in shape and ribbing, much resembling those of the *Gazella picticaudata*.

Gazella subgutturosa

is a much smaller beast than the last. It is found in Persia,[1] and extends to Yarkand, where a specimen was shot by Major Biddulph when with the Yarkand Mission, between Maral Bashi and Kashgar. It is called by the natives 'djeran,' or 'jairan.' Its general colour is pale red, with dark facial marks, a dark band along the side where the white of the belly joins the red of the back, and above it a curious pale streak. The buck has long, annulated, lyrate horns, with the tips inclining inwards. It measures 27½ ins. in height, and the horns of a specimen quoted in the 'Scientific Results, Second Yarkand Mission,' measured 14 ins. in length by 5 ins. in girth. There is a coloured plate of one in the same publication.

Major Cumberland, in his journal published by 'Land and Water,' mentions hawking these gazelles with trained eagles. He says that the doe is not much bigger than *Gazella Bennetti*, with short stumpy horns.

XLVI. THE THIBETAN GAZELLE (*Gazella picticaudata*, *Procapra picticaudata*—WARD)

Thibetan 'Goa'

This lovely little animal is of a creamy fawn colour in its winter coat. It has a white anal disc of longish hair, and a black tail about four inches long, which, like the Indian gazelle, it keeps perpetually wagging. The summer coat is slaty grey. The horns are like those of the Indian gazelle, but are longer, of finer grain, and have a far bolder sweep backwards before turning up at the tips. The female has no horns. It frequents the high plateaux along the Chinese frontier, in Eastern Ladak, in the neighbourhood of the Tso-moriri Lake, but apparently does not extend north of the

[1] This antelope is also found in the Caucasus, between Tiflis and the Caspian, where it is also locally known as djèrân.—C.P.W.

Measurements

Authority	Height at shoulder	Total length	Weight as shot	Length of horns	Girth at base	Span tip to tip	Remarks
			PANTHOLOPS HODGSONII				
	ins.	ins.	lbs.	ins.	ins.	ins.	
Colonel Kinloch quotes a head	..	..	..	23½	..	..	'Large Game Shooting'
Mr. A. O. Hume	..	..	..	27¾	5⅞	13½	Rowland Ward, 'Horn Measurements'
Sir R. Harvey, Bart.	..	..	..	27⅝	5½	11¼	" " "
Mr. A. O. Hume	..	..	..	27¼	5½	15⅛	" " "
Major Ward	36	..	85	26½	..	..	'Sportsman's Guide to Ladak, &c.'
Hon. C. Ellis	..	..	..	26¾	5⅞	13⅝	Rowland Ward, 'Horn Measurements'
The Writer	..	..	..	26	..	..	
Capt. G. Campbell	..	..	..	25½	5½	12½	Rowland Ward, 'Horn Measurements'
Hume Collection, British Museum	..	..	..	25⅝	5⅝	12¼	" " "
"	..	..	..	25¼	5¼	12¼	" " "
Major Ward	37	..	85	24	..	..	'Sportsman's Guide to Ladak, &c.'
" "	37	..	90	24	..	..	" " "
The Writer	35	..	..	20½	..	..	

Major Ward puts the average length of a full-grown buck's horns at 22 ins., which seems about right.

Authority	Height at shoulder	Total length	Weight as shot	Length of horns	Girth at base	Span tip to tip	Remarks
			SAIGA TARTARICA				
Hon. W. Rothschild	..	..	..	14¾	5¼	3½	Rowland Ward, 'Horn Measurements'
Sir E. G. Loder, Bart.	..	..	..	13¾	5	..	" " "
Sir V. Brooke	..	..	..	13½	4⅝	3½	" " "
British Museum	..	..	..	13¼	..	..	
" "	..	..	..	13½	..	..	
Hon. W. Rothschild	..	..	..	13⅛	5¾	4¾	Rowland Ward, 'Horn Measurements'
British Museum	..	..	..	13	..	..	

Measurements (continued)

Authority	Height at shoulder	Total length	Weight as shot	Length of horns	Girth at base	Span tip to tip	Remarks
			GAZELLA GUTTUROSA				
	ins.	ins.	lbs.	ins.	ins.	ins.	
Sir E. G. Loder, Bart.	..	..	..	13⅛	4⅜	6¼	Rowland Ward, 'Horn Measurements'
Mr. St. George Littledale	..	..	..	12¾	4⅞	3⅜	" " "
" " "	..	..	..	12¼	4⅜	4¾	" " "
Mr. R. Beech	..	..	..	11½	4⅝	3	" " "
Mr. Rowland Ward	about 30	..	..	..	..	..	" " "
			GAZELLA SUBGUTTUROSA				
Scientific Results, Second Yarkand Mission	27½	..	..	14	5	..	
Mr. Rowland Ward	about 26	..	..	..	..	..	'Horn Measurements
Dr. O. Finsch, British Museum	..	..	..	13¾	4½	6	" "
Hume Collection, British Museum	..	..	..	13⅝	4¾	5½	" "
" "	..	..	..	13	4½	5	" "
" "	..	..	..	12⅞	4¾	4⅜	" "
" "	..	..	..	12⅝	4¾	5¼	" "
" "	..	..	..	11¼	5	5⅛	" "
			GAZELLA PICTICAUDATA				
Major Greenaway	..	..	37 cleaned	13½	..	..	
Hume Collection, British Museum	..	..	..	13½	3⅝	5¼	Rowland Ward, 'Horn Measurements
Mr. H. C. V. Hunter	..	..	..	13⅛	4	3⅝	" " "
" "	..	..	..	13	3¾	3½	" " "
Colonel Kinloch	about 24	..	..	13	..	..	'Large Game Shooting'
Major Ward	..	..	..	13	..	..	'Sportsman's Guide to Ladak, &c.'
Major Greenaway	23½	41	47	13	..	..	
" (a doe)	23	38½	40	..	..	..	
"	..	..	..	13	..	..	
Captain K. Mackenzie	..	..	..	13	..	..	
Average of good head	..	..	..	13	..	..	

Indus, as far as Ladak is concerned, its limits in Chinese Thibet being at present unknown.

Goa do not appear to lie down much in the middle of the day, and in May and June, at all events, are constantly on the move. They appear to resort to particular spots for dropping their dung, and little heaps of it may be noticed wherever goa are at all plentiful.

As they are generally found on the grass flats that fringe the streams, or on some almost level plateau, stalking them is by no means easy, though they are not generally very shy, will occasionally allow considerable liberties to be taken in approaching them, and will stop to look after a fallen companion. The Tartars say that they can be stalked down wind, but they say this also of the Thibetan antelope, and Major Ward's advice on this point is sound: 'Believe it, reader, if you like, but do not try it often.'

XLVII. INDIAN ANTELOPE (*Antilope Bezoartica*)

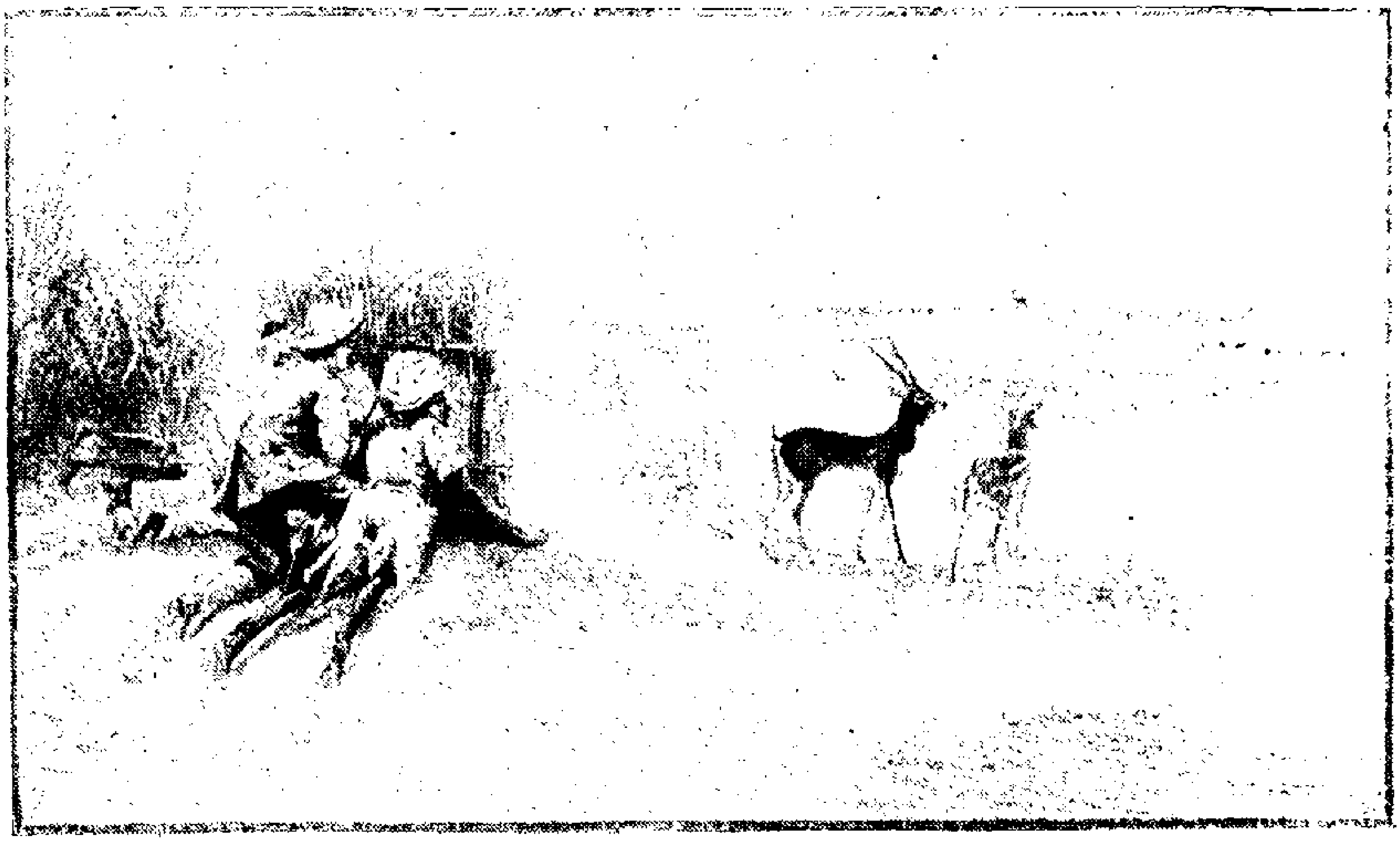
Generally 'Heran,' or 'Mirug,' from the Sanscrit 'Mirga'

This is the well-known black buck, which is found all over India at intervals from the extreme south to as far north as the Jhelum, following the southern bank of that river till (joined by the Chenab, Ravi and Sutlej) it flows into the Indus, which then becomes the black buck's northern boundary. Essentially a plains-loving animal, it avoids hills and heavy forest, but is often found in the long grass which covers the islands and banks of many of the large rivers. Though considerable tracts of apparently suitable country do not seem to hold a single herd, special districts where antelope are always to be found seem to crop up unexpectedly all over India. In the North-West Provinces, and along the borders of the Bikanir Desert between Rajpootana and the Punjab, it appears to be more generally plentiful than in the rest of India, and the horns in these districts grow longer. Sanderson says, in 'Thirteen Years among the Wild Beasts of India,' that an 18-in. horn is a decided

rarity in Mysore, whilst in the Bikanir Desert they are frequently obtained 24 ins., and occasionally 27 ins. or more, in length.

A black buck in his best coat is a very handsome animal, but is too well known to require description.

The buck usually changes his coat after the rutting season, which is in the spring, the season varying slightly according to locality. During the hot months he is generally more or less brown, regaining the black coat after the rainy season. Many full-grown bucks with good heads do not seem to turn black



Tame decoys

at all, but the master buck of a herd is almost invariably black at the proper season.

Major FitzHerbert (a very careful observer of the habits of wild animals) is of opinion that it is usually the master buck of the herd who turns brown in the hot weather ; he is then used up, and often leaves the herd to the possession of a younger buck, who has remained black.

The herds, though more frequently consisting of ten or a dozen animals, are occasionally of immense size—indeed thousands are mentioned by some authorities. Antelope in

herds are, as a rule, fairly easy to get within shot of ; but a solitary old black buck takes precious good care of himself, and as there is rarely cover enough to stalk him without being seen, these wary old gentlemen generally escape. The natives have many methods of hunting antelope. Pursuing them with trained chitas has been so often described that any detailed account of it is unnecessary. It is interesting to see once, the chita's speed being so amazing, but considered as sport it is poor fun. Black buck are occasionally snared by sending tame bucks among them with nooses attached to their horns. The wild buck attacks the intruder, and gets caught by the horn. This plan is also adopted for snaring ravine deer, but not often, as the gazelle is said to be harder to train than the black buck. The commonest way of snaring antelope is by covering about an acre of ground thickly with nooses and driving a herd over it. Trained bullocks are often used by native shikaris to enable them to get within the close range they love for a shot ; and the writer has seen the following curious method practised in Central India. A trained buck and doe are taken out, each having a light cord about ten yards long attached to it, and the pair are led by an attendant, a light screen about three feet square made of grass and leaves with a small hole in the centre being carried by the shikari, and the whole party moves under cover of a third man on horseback to within about three hundred yards of a herd of antelope. The screen is then planted on a spot commanding a good view ; the men on foot crouch behind it, and the horseman rides slowly off to a flank. The tame deer are then let out to the full extent of their lines on one side of the screen, and begin playing round one another. The master buck of the herd, seeing an impertinent intruder on his ground, trots out at once to do battle for the doe, but the screen puzzles him, so before coming close he generally circles round to try and see behind it. As he moves the screen is shifted round, the men scrambling round on hands and knees behind it, and if there are two Englishmen bursting with suppressed laughter in addition to the two natives, all scuffling round as

the screen moves and trying to keep their legs out of sight, the business is most comical.

Directly the wild buck stops, the screen and the men behind it must remain motionless. Having failed to discover what is behind the screen, the buck, though he is still suspicious, probably because he caught sight of a clumsy English leg, feels that he must try to capture that enticing doe, but decides on having a look from the other side of the screen first, so back he gallops to the other flank, and the scrambling process is repeated. Gradually he comes within range, the rifle is poked through the hole in the screen and he gets his quietus; after this the tame deer are given a handful of corn, and the party sets out to look for another herd. The tame buck employed in this manœuvre should be a brown one, as if an old powerful-looking black one is used the wild buck will often decline the contest.

In some districts the antelope are so wild that sportsmen have to approach them under cover of bullock-carts, and occasionally dress up as natives to get within range. The antelope are accustomed to see carts and natives, and will generally allow them to pass within about a hundred and fifty yards, while the sight of a European will start them off at once; but in most places in Central and Northern India these accessories are not needed. The pleasantest way of shooting is to ride a quiet horse, which will do for stalking if the antelope are wild or for riding down a wounded buck, taking a few coolies with you to carry game, luncheon, guns and cartridges.

A shot-gun enables one to vary the bag pleasantly with small game, without interfering with the chance of getting antelope. If the sportsman is fond of coursing, greyhounds may be taken, the Rampore breed suiting the country best; but after many trials the writer has become unwillingly convinced that dogs do more harm than good. If there are any crops about they soon get unsighted, get on to fresh deer, and disturb the whole country.

On the other hand, if the sportsman has dogs he can often

enjoy a course after a fox or a hare to vary the entertainment, and a good course with a wounded buck is a very pretty sight. The usual proceeding is as follows: The sportsman rides till a herd is sighted; he approaches them as far as he thinks safe, probably within about six hundred yards; he then dismounts, and if he is going to use his horse for stalking, goes on with the horse and groom, leaving the coolies and dogs behind, with orders to follow him slowly, keeping as far back as possible without losing sight of him. If the antelope are feeding or moving slowly, the sportsman directs his course so as to cross their path about a hundred yards ahead of them. If the creatures are lying down or stationary, he must try to pass within a hundred yards of the flank which is to the leeward of the herd, walking on the far side of his horse, which is led by the groom on the same side. If he has no horse with him, he should hold his rifle so that the sun does not shine on the barrels. If two sportsmen are working together (a most killing plan with crafty men who play into one another's hands), they should each take a flank and go rather wider than they would if hunting single-handed, so as to keep the herd between them. As long as that can be managed one or other of the guns is sure to get a chance at the best buck. The sportsman should show himself to the herd a long way off, and walk slowly, without any attempt at concealment; he must remember never to walk straight at them, but always as if he were going to pass them at about a hundred yards; if he finds he is lying too far out of his course, he should edge quietly towards them without turning, and he should never stop until he means to fire. He should never look direct at the herd; quiet side glances will give him all the information he requires.

When he has approached to within two hundred yards, if the herd is lying down some of the does will get up; but the sportsman can go on safely till the buck he wants begins to stir. The old fellow will rise leisurely, stretch himself, and then turn to gaze. This is the time for the shot, and if it can be taken without sitting down or kneeling it is far

more likely to be an easy one. An excellent rest[1] for firing standing can be made with a light bamboo having an iron crutch covered with leather on the top to hold the rifle barrels. The crutch should be the exact height of the top of the sportsman's shoulder, and is held, when firing, with the left hand at arm's length. The bottom of the stick should be shod, to prevent it wearing away when used as a walking-stick. The advantages of using this rest are particularly noticeable when shooting among low bushes, which so often interfere with a shot when sitting or kneeling.

Frequently, just before the sportsman can get a fair chance at the buck he wants, the herd begins to move off; two or three does commence bucking high in the air, and to a novice it would appear that the whole herd are on the point of galloping away. This, however, by no means follows. The master buck often takes very little notice of their pranks, and follows slowly after them, in which case the does calm down, and though still continuing to move, will lead on slowly. The sportsman should follow them quietly, still keeping on their flanks, and heading so as to cut them off, if possible; sooner or later he will get a chance if he sticks to them quietly, though if he has followed them for some distance he will probably only get a running shot. Each herd has its own district as a rule, and sooner than be forced far over its boundary, it will turn and gallop back past the sportsman, often within fifty yards. This is even more noticeable with ravine deer, whose herd districts appear to be smaller than those of antelope, and who generally require a lot of following up and bullying before they give a chance. A good buck with a herd of either antelope or of ravine deer need never be given up as hopeless as long as it can be followed. In following a wounded buck the main point is just to keep it in sight without pressing it until it lies down, when it should be left for about half an hour before being restalked. If it is intended to ride, or course the buck, the attendants should be

[1] Such a crutch is in general use amongst Caucasians.—C. P.-W.

signalled up at once, as the half-hour's rest will spoil the run, but the sportsman should be careful that the dogs are not slipped till the buck is well clear of the herd. The best way is for the sportsman to have the dogs brought up to him, then ride ahead, the slipper running after him with the dogs in leash till the buck begins to gallop; then have the dogs slipped and ride the buck, halloaing on the dogs till they are fairly laid on. If he has no dogs he will be able to get within three hundred yards of the buck before the latter really starts, and then he must send him along; after about half a mile he will find that he can get within twenty yards, but no nearer. A few hundred yards farther the buck will begin to falter and then suddenly throw himself down, and the sportsman can either spear him or dismount and knife him—the buck has run himself out. With Express rifles, unless a buck is hit in the leg, he will give no run at all; with a body wound he can't gallop any distance, though he may give trouble if pursued on foot. The bucking bounds which antelope make are very peculiar (no wounded animal ever bucks). The distance covered may be only a few feet, the animal jumping apparently to get a good view, but when the deer are galloping, the distance covered in a bound, apparently made without effort, is extraordinary. Major FitzHerbert paced three successive bounds of a doe on softish sand; two measured eight yards and the third seven yards.

A buck slightly wounded in the leg will occasionally give a grand run. In 1875 Major FitzHerbert shot a buck through the hock without breaking the bone. Mounted on a fast Arab, he rode this buck for a mile and a half without being able to get up to him, as the buck led over a succession of gram fields where he was able to keep along the narrow headlands while the horse had to plough through the clods. Finding that he was, if anything, losing ground, the rider pulled up, and the buck stopped and lay down in a patch of grass. The attendants then came up with a couple of deerhounds, which were slipped at the buck with a good start, but could not run into

him till he had gone another mile and a quarter, and only then caught the buck when he dislocated his wounded hock.

In 1876 the same sportsman had another brilliant gallop on the same horse after a buck wounded in the fleshy part of the thigh. A brace of dogs were slipped, but got away on to other deer early in the run, and the buck was ridden till he dropped and was despatched with a knife. This run was measured about five miles on the map from point to point, and must have been seven or eight miles as the buck went. Cases have been reported of unwounded black buck being run down by dogs in the Bombay Presidency, but in Northern India, though the writer knows of two instances of unwounded does being successfully coursed (one of these at all events was not in young, as it was examined by a medical officer to decide a bet), the bucks could always gallop away from the dogs.

The biggest bag of black buck the writer knows of was sixty-four bucks in 1883, by two guns in five days and a half. Of these, ten bucks, whose horns were all over 22 in. in length, were shot by one of the sportsmen in a morning's work. The biggest mixed bag by one gun in a day was two nylghai, five ravine deer, and three black buck in 1875.

Black buck in their wild state are very pugnacious, and when two bucks are fighting they may often be approached without difficulty. I once walked up to within eighty yards of two who were desperately hard at it; sat down and watched the fight till they stood with their horns locked, and then shot the blacker buck of the pair through the lungs. He threw up his head and bolted, pursued by his antagonist, a brown buck with good horns, who seemed to have had rather the best of the battle while it lasted. They ran about one hundred yards, the brown buck driving and horning the other till the latter dropped dead; then, after making two or three attacks on the prostrate body, the brown buck began to swagger round it, head and tail in the air, as proud as could be. By this time I had again got well within range, and as the brown buck now apparently saw me for the first time (not having taking any

notice of the shot), I dropped him with another bullet so that he fell over the carcase of his late rival.

Writing of the height that antelope can jump, Williamson mentions a black buck leading a herd over a net which was propped up on poles 13 ft. long, and which must have been at least 11 ft. high.

XLVIII. THE NYLGHAO (*Portax pictus*)

Native names: 'Nilghao,' 'Lilghao'; in the Punjab, 'Roz'

This animal is found pretty nearly all over the plains of India. Jerdon says it is not known in the extreme south of India, but Sanderson mentions it as occurring in the Madras Presidency on the borders of Mysore. According to my own experience, it is most plentiful in Central India, though it is common enough in the North-West Provinces.

An old male, usually called a blue bull, is a large beast with a lean head, surmounted by short cow-like horns, but with a curious rib along the base of the horn in front; the neck is long and carried high; the withers are high, and give him a horse-like appearance, but he falls away towards the hind-quarters; the tail is like a cow's, with a tuft at the end, but only reaches to the hocks. His general colour is a dark iron grey; the chin, lips, and inside of the ears are white; the ears are rather large and cow-like; there is a white spot on each cheek, a large white patch on the throat, below which hangs a tuft of long black hair; the chest and stomach are white, there are white rings on the fetlocks, and he has a thin upright black mane.

The female is fawn-coloured, and is without horns.

Scrub jungle, composed of 'babul' trees, 'dhak' and 'beyr' bushes, is the ground on which to look for nylghai, and if there is a patch of sugar cane adjoining such a jungle, it is an almost certain find. The natives often enclose these patches of cane with grass fences nearly six feet high, but nylghai will always jump them.

As a rule, natives object more or less strongly to nylghai being shot, regarding them as cattle; and as they afford poor sport with the rifle, most men spare them after having obtained a few specimens, especially if the ground is not rideable; but where they can be ridden it is quite another matter. A wounded bull will give a grand run, and even an unwounded one can be ridden down if well pressed at first. This is rather a difficult matter for a single horseman, but parties of three or four have frequently done it. Kinloch mentions an instance of its having been done single-handed, and gives some stirring accounts of his own adventures after nylghai. Cows, he says, it is almost impossible to catch, the only chance being with heavy old bulls.

Blue bulls have frequently been tamed and trained to carry loads. Sterndale mentions one he used to ride, but they are as a rule dangerous in captivity. The writer owned one who would let him sit on his back when lying down, but he would always charge any pony that came near him, dropping suddenly on his knees to use his horns. He used to break loose, and hunt the native gardeners up trees, whilst he enjoyed the produce. As the bull would not consent to be led, he had to be left behind when the writer's battalion left the station, and his last exploit was to hunt the portly native landlord of the house round and round the premises when he came to look at his property.

The hide is very thick, especially on the shoulders, and is much prized by the boatmen on all the rivers for making up into the inflated skins they use.

Sterndale remarks: 'He sometimes even devours such quantities of the intensely acrid berries of the aoula (*Phyllanthus emblica*) that his flesh becomes saturated with the bitter elements of the fruit. This is most noticeable in soup, less so in a steak, which is at times not bad.'

The writer has never had the luck to taste any part of a blue bull that was worth eating except the tongue.

XLIX. INDIAN GAZELLE (*Gazella Bennetti*)

Commonly called Ravine Deer; native name generally 'Chikara'

The gazelle is found in suitable localities pretty nearly all over India, with the exception of Lower Bengal, the Western Ghauts, and the Malabar coast. Wherever there is sandy ground, low stony hills, or the network of ravines which fringes the banks of so many Indian streams near their sources, or where they cut their way through low hills, ravine deer are likely to be found. They avoid heavy forest or swamp covered with high grass, nor do they usually frequent closely cultivated ground unless there is scrub, jungle, or a ravine near to which they can retire when disturbed.

They are fidgetty, restless little animals, and, like the Thibetan gazelles, are incessantly twitching their tails. Even where not much hunted they are generally pretty wild, but as they do not as a rule go far when disturbed, the sportsman can usually get a shot by perseveringly following up a herd. A steady shooting horse is of great assistance in stalking them, and on the edge of the Bikanir Desert, where they are very plentiful, the easiest way of approaching them is under cover of a riding camel. As black buck and ravine deer are often found on the same ground, the same tactics in the stalk are applicable to either. The stick-rest recommended for black buck shooting is of the greatest assistance when shooting ravine deer among bushes. The bucks are often seen alone, and herds rarely consist of more than a dozen animals. The does have thin horns, and occasionally, in bad light or jungle, pay the penalty of being mistaken for bucks.

Ravine deer shooting with a light rifle is very good fun. Straight shooting is necessary for so small a mark, and as a rule the day's amusement can be varied by shots at black buck or small game. Colonel Howard, in 1883, got one ravine buck, one bustard, two peafowl, one sand-grouse, one duck, in a day, all shot with a rifle.

A ravine buck with a broken leg will give a good run to dogs if found in the open, but as a rule the ground these deer frequent is too broken for coursing.

An unwounded doe was run down by three dogs belonging to officers of the Rifle Brigade in 1876, but on another occasion the writer saw a fawn run clean away from a good dog. Kinloch describes how the officers of the Guides used to hunt ravine deer with dogs and falcons.

L. THE FOUR-HORNED ANTELOPE
(*Tetraceros quadricornis*)

Native names: generally '*Charsingha*,' '*Choka*,' '*Doda*'; *in Chota Nagpur* '*Cháorang*' (*Kinloch*)

Four-horned antelopes are found thinly scattered all over India, but, according to Sterndale, not in Ceylon or Burmah. They are met with in Rajputana, but the writer has never heard of them in the Punjab.

They generally live alone or in pairs, and frequent bamboo jungle, or the long grass and bushes near forests.

Their colouring varies a good deal, but it is generally a reddish-brown, paler below the forelegs, and fetlocks dark; the latter being ringed with pale marks. The female is hornless. The male has two pairs of short, smooth black horns, the front pair, which is shorter than the other pair, growing almost above the eyes, while the rear pair rises just in front of the ears. The front pair are often mere knobs, and good specimen heads, with the four horns complete, are not easy to get; in fact, this antelope is such a small animal and sticks so persistently to cover, that the majority of those that are killed are bagged by lucky snap-shots. Sterndale quotes a letter in the 'Asian,' signed 'Bheel,' in which the writer remarks: 'It is found in the thick jungles at the foot of the hills. It selects some secluded spot, which it does not desert when disturbed, returning invariably to its hiding-place when the coast is clear.' This peculiarity might well be taken advantage of by any

Measurements

Authority	Height at shoulder	Total length	Weight as shot	Length of horns	Girth of horns	Span tip to tip	Remarks
			ANTILOPE BEZOARTICA				
	ins.	ins.	lbs.	ins.	ins.	ins.	
Mr. A. O. Hume	..	..	..	28¼	5	17¾	Rowland Ward, 'Horn Measurements'
Mr. Rowland Ward	..	..	Average 85	..	..	..	,, ,,
Sterndale	32	35	..	23	..	..	('Triangle' in 'The Asian' ,,
Major Ward	..	..	..	27¾	..	..	'Sportsman's Guide to Ladak, &c.'
Col. Kinloch	..	..	..	27	..	..	'Large Game Shooting'
,,	..	..	..	27	..	..	,,
Sir V. Brooke	..	..	..	27	5	19½	Rowland Ward, 'Horn Measurements'
Captain Brooke	..	..	..	26¾	..	..	
Col. Kinloch	..	..	..	26¾	..	..	'Large Game Shooting
Mr. A. O. Hume	..	..	..	26¼	5	17¾	Rowland Ward, 'Horn Measurements'
Col. Kinloch	..	..	..	26	..	..	'Large Game Shooting'
Gordon Cumming	..	..	..	26	..	..	'Wild Men and Wild Beasts
,,	..	..	..	26	..	..	(An albino) ,,
Captain Hervey	..	..	..	25¾	..	..	
Mr. A. O. Hume	..	..	..	25⅝	4¾	20¾	Rowland Ward, 'Horn Measurements
Col. Martin	..	..	..	25½	..	15	,, ,, ,,
Sir J. Morris, K.C.S.I.	..	..	..	25⅛	5⅛	21¾	,, ,, ,,
Hume Collection British Museum	..	..	..	25⅜	5½	14½	,, ,, ,,
,, ,, ,,	..	..	..	25	4⅞	19	,, ,, ,,
Colonel Howard	..	..	..	25	..	..	
Capt. H. Petre	..	..	..	25	..	..	
Gordon Cumming	..	..	..	25	..	..	'Wild Men and Wild Beasts
Major Greenaway	33	..	..	..	..	..	
'Spherical,' 'Oriental Sporting Magazine,' 1870	..	..	83·4	..	..	..	Average weight of bucks in Allahabad district
,, ,, ,,	..	..	70·8	..	..	..	Average weigh of bucks in Bundara district
Average of good head	..	..	..	20	..	..	

Measurements—(continued)

Authority	Height at shoulder	Total length	Weight as shot	Length of horns	Girth of horns	Span tip to tip	Remarks
Portax pictus							
	ins	ins.	lbs.	ins.	ins.	ins.	
Major FitzHerbert	51	..	..	9½	..	..	
British Museum	..	..	..	9¼	6¾	4⅞	Rowland Ward, 'Horn Measurements'
Col. Kinloch	about 56	..	..	..	..	..	'Large Game Shooting'
Mr. A. O. Hume	..	..	..	8⅞	6⅝	3½	Rowland Ward, 'Horn Measurements'
The Writer	..	..	..	8¾	7	..	
"	..	..	..	8¼	7⅛	..	
Sterndale's 'Mammalia'	52 to 58	96 to 106	..	8 to 10	..	..	
Major FitzHerbert	53	..	..	..	..	..	
Major Greenaway	55	..	..	..	..	..	
"	53	..	..	7½	..	..	
"	50	..	..	..	..	..	
Average of good head	...	..	..	8	..	..	

Authority	Height at shoulder	Total length	Weight as shot	Length rear horn	Length front horn	Length of horns	Girth of horns	Span tip to tip	Remarks
Gazella Bennetti									
	ins.	ins.	lbs.	ins.	ins.	ins.	ins.	ins.	
Capt. Brooke	..	..	..	..	..	14	..	..	Both shot the same evening near Ferozepore
"	..	..	..	..	..	14	..	..	
Major Ward	..	..	..	..	..	14	..	..	'Sportsman's Guide to Ladak, &c.'
Sir V. Brooke	..	..	..	..	..	13¾	4½	7	Rowland Ward, 'Horn Measurements'

Major FitzHerbert	..	..	..	..	..	13½	..	..	
Col. Kinloch	..	..	..	..	..	13¼	..	..	'Large Game Shooting'
Major FitzHerbert	..	..	..	..	..	13	..	..	
Sterndale's 'Mammalia'	26	42	..	..	..	12	..	..	
'Spherical,' 'Oriental Sporting Magazine,' 1870	..	..	39½	..	..	..	..	..	Bucks
" " "	..	..	38	..	..	..	..	..	
" " "	..	..	35	..	..	..	..	..	
" " "	..	..	33	..	..	..	..	..	
" " "	..	..	30	..	..	..	..	..	Does
" " "	..	..	28½	..	..	..	..	..	
" " "	..	..	24	..	..	..	..	..	
Average of good head	..	..	..	..	..	12	..	..	

TETRACEROS QUADRICORNIS

British Museum	..	..	..	4½	2⅜	..	..	..	
Sir E. G. Loder, Bart.	..	..	..	4⅜	2¼	..	..	..	Rowland Ward, 'Horn Measurements'
Col. J. Evans (British Museum)	..	..	..	4	2½	..	..	..	" " "
Sir R. Harvey, Bart.	..	..	..	3¾	1¾	..	..	..	" " "
H.R.H. Duke of Edinburgh	..	..	..	3½	2	..	..	..	" " "
Sir E. Durand, Bart.	..	..	..	3¼	1⅞	..	..	..	
British Museum	..	..	..	3¼	½	..	..	..	" " "
Sterndale's 'Mammalia'	24 to 26	40 to 42	..	about 5	about 1½	..	..	..	
Average of good head	..	..	..	3	1½	..	..	..	

MEMINNA INDICA

The Writer	11	21½	about 10	..	..	..	..	..	Other measurements of this buck for stuffing: Height at croup, 11¼; length of neck, 2¼; girth of neck, $7\frac{3}{16}$; girth behind shoulder, 13½; girth middle of body, $16\frac{7}{20}$; girth in front of stifle, 13½; forearm at elbow, $3\frac{5}{16}$; thigh close to body, $6\frac{4}{17}$ ins.
Jerdon	10 to 12	22 to 23	5 to 6	..	..	..	..	..	
Professor Garrod, 'Cassells' Nat. Hist.'	8	18	..	..	..	..	..	..	

sportsman desirous of obtaining a specimen; on a four-horn being put up, his hiding-place might be noted, the attendants sent on a few hundred yards, and the sportsman remain behind to intercept the animal on its return. The writer has never tried this plan, but only offers the suggestion for what it is worth.

The four-horn has the stilted action peculiar to *deerlets*, walking on the tips of its toes. Sterndale remarks that it is higher at the croup than the withers, and runs with its neck stuck out in a poky sort of way, making short leaps.

LI. THE MOUSE DEER (*Meminna indica*)

Native names: 'Pisora,' 'Pisai'

Habitat, the large forests of India; but it is not known, according to Jerdon, in the countries eastward of the Bay of Bengal. It is common in the bamboo forests of the Central Provinces (Sterndale). The writer has never heard of it in Northern India, nor has he even seen it in Central India; in the Western Ghauts it is common enough.

In colour it is an olive dun, with lines of pale yellow spots along the sides; the lower parts are white; the ears small and rounded; the legs fine and delicate, being scarcely thicker than an ordinary pencil; the tail is short. The male has delicate little tushes pendant from the upper jaw, like the Barking deer; the scrotum is hairless, and instead of being between the legs is behind them, like the ordinary little Indian ground squirrel, which it very much resembles in colour and markings. It is commonly found in bamboo jungle, and the writer got a good specimen in the Western Ghauts. Sterndale writes of some tame mouse deer which he had: 'They trip about most daintily on the tips of their toes, and look as if a puff of wind would blow them away. They are said to rut in June and July, and bring forth two young about the end of the rainy season.'

LII. KYANG (*Equus hemionus*)

Thibet 'Kyang'

The kyang was doubtless originally intended by Providence to fulfil some good purpose, but having turned out a failure was located in Thibet, where it was probably considered it would not be much in the way ; or else it was designed to take the place of the insect life on the lower ranges and act as a blister on the temper of the sportsman. The shapoo, limb of the devil as it is, has some good points in its favour—e.g. a graceful carriage, fine horns, and it is a desirable acquisition to the bag. The kyang has nothing to recommend or excuse it. It is an ugly, donkeyfied, fiddle-headed brute, with straight shoulders. In colour it is a mealy bay with a dark-brown hog mane, dorsal stripe and tail. Its head and ears are coarse and large, and its screeching bray is as unpleasant as its general appearance. Being absolutely worthless to shoot, it is always trading on that fact, and on the utterly false pretence that it is deeply interested in the actions and habits of human beings, particularly Europeans, is for ever thrusting itself into society where it is not welcome, thereby spoiling the sportsman's chance of a quiet interview with the animal of his choice. The one trait in its character that might be reckoned as a palliation by an unduly benevolent commentator is that it appears not to be selfish. As soon as it thinks it has got a sportsman's temper well under way, it will scour the country round for all its friends and relations, and assemble them to enjoy together the interesting spectacle of an angry man armed with a rifle that he dare not discharge for fear of alarming something worth firing at. Hints and persuasion are thrown away, and nothing but a declaration of war has the smallest effect on kyang. A skilful diplomat may occasionally gain a temporary advantage by misleading kyang as to his intended route—getting the kyang, for instance, to believe that he wants to cross a particular pass, and then, by taking advantage of cover, escaping up

a side ravine; but as a rule the sportsman has only the choice of two alternatives: either to take the first opportunity of hiding and remaining hidden till the disturbance is over, or else going to some other part of the ground.

Measurements.

Authority	Height at shoulder	
Col. Kinloch . .	About 14 hands	
Sterndale . . .	12 to 14 hands	
Major Greenaway .	5 year old female, 12½ hands	5½ inches below the knee
" .	male, 13 hands	
The Writer . .	old male, 13½ hands	

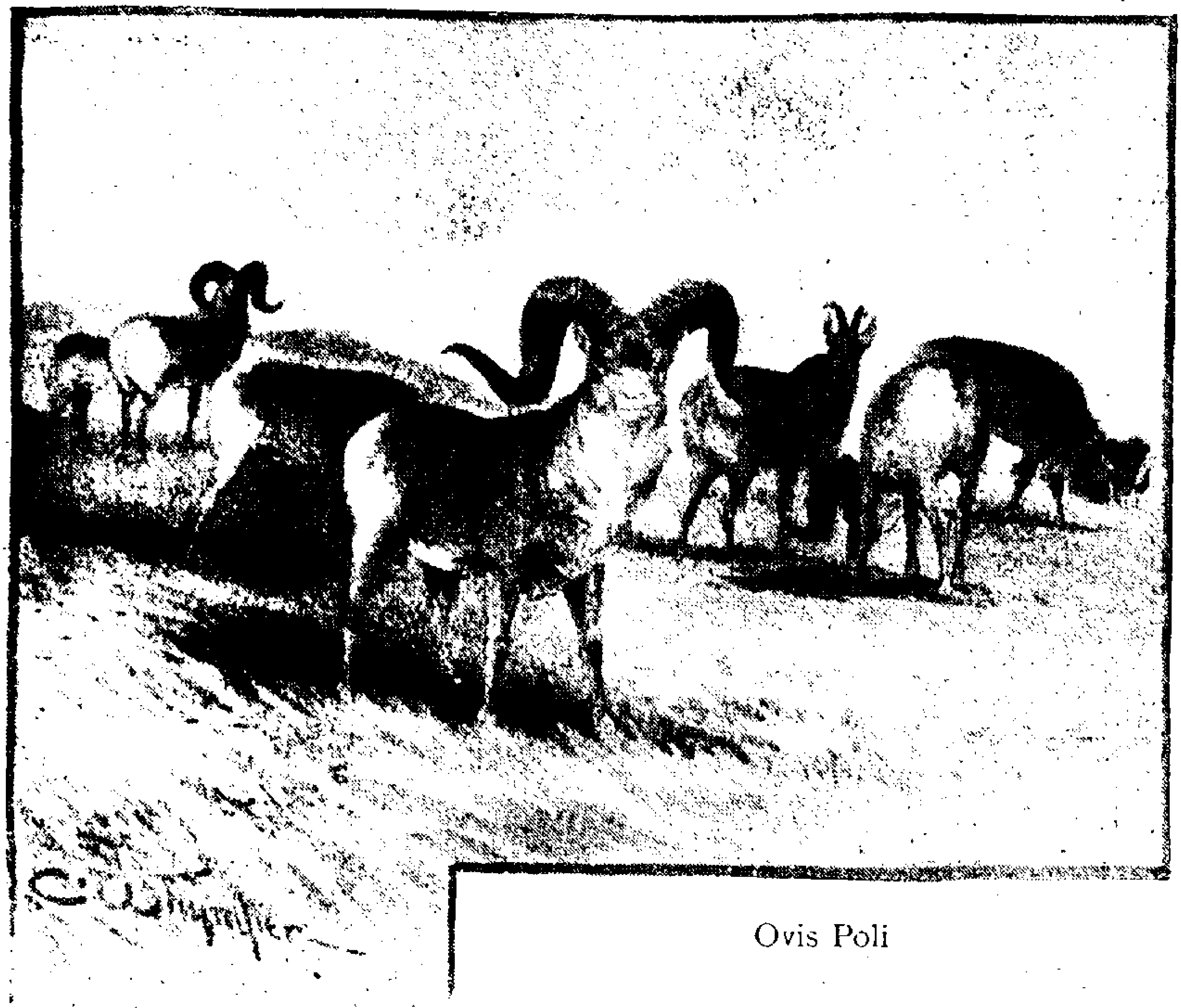
LIII. THE WILD ASS (*Equus onager*)

Native names: 'Ghor khur,' Hindi; 'Ghour,' 'Kherdecht,' Persian; 'Koulan,' Kirghis (Sterndale).

The wild ass is common in Persia and extends through Beluchistan and Sind to the Bikaneer Desert and Kutch, its southern limit according to Jerdon being Deesa, and its eastern 75° E. longitude. It is closely allied to, if not identical with, the wild ass of Assyria, *Equus hemippus.*

As south of the Indus the wild ass is by no means common, and is very shy and difficult to stalk in the open desert, comparatively few have been shot by Europeans. Sterndale, quoting Major Tytler, says that on the Bikaneer Desert the natives organise a hunt once a year to catch the foals for sale to native princes, and that a full-grown one has more than once been run down fairly and speared. The Beluchis also ride down and catch the foals, and shoot the full-grown ones for food, the ground there being favourable for stalking. A gallop after a wild ass should be exciting, but few sportsmen, the writer imagines, would care to shoot more than one specimen of a beast whose sole trophies are the hoofs.

Sterndale says they stand eleven or twelve hands at the shoulder, which is considerably smaller than the kyang.



Ovis Poli

CHAPTER XII

THE OVIS POLI OF THE PAMIR

By St. George Littledale

The great Pamir, or 'roof of the world,' forms the nucleus of the whole Central Asiatic highland system, and consists of a vast plateau formation some 30,000 square miles in extent, with a mean elevation of at least 15,000 ft.

This, shortly, is what *modern* geographers have to say of the home of *Ovis Poli*:

The plain is called Pamier, and you ride across it for twelve days together—finding nothing but a desert without habitations or any green thing, so that travellers are obliged to carry with them whatever they have need of; North-east, you travel forty days over mountains and wilderness, and you find no green thing. The people are savage idolaters, clothing themselves in the skins of

beasts; they are in truth an evil race. There are numbers of wild beasts—among others wild sheep of great size, whose horns are a good six palms in length. From these horns shepherds make great bowls to eat from, and they use the horns also to make folds for their cattle at night.

So Marco Polo wrote of the Pamir six hundred years ago, and six centuries earlier still some Chinese pilgrims, in describing it, said that 'it was midway between heaven and earth; the snowdrifts never cease winter or summer: the whole tract is but a dreary waste without a trace of human kind.'

These descriptions are nearly as true to-day as they were when they were first written, and this Pamir is the home of the grandest of all the sheep tribe, the great *Ovis Poli*.

Until very recently the Pamir was considered one of the most inaccessible places in Asia; but the Transcaspian Railway, opened in May, 1888, from the Caspian to Samarkand, has completely altered this state of affairs, though the Russian Government looks with disfavour on English travellers wishing to use the line so cheaply and expeditiously constructed for purely military and strategical purposes.

Had it not been for the untiring efforts of Sir Robert Morier, our Ambassador at St. Petersburg, continued for several months, I should never have allayed the natural suspicions of the Russian officials in the Asiatic and War Department, and obtained the necessary permission to travel by that route. I entirely owe the success of our expedition to his efforts, and I can never sufficiently thank him for the trouble taken.

But had I known as much about Russian Central Asia before as I do now, I should not have waited for the railway, but have crossed the steppes to Khokand, and thence south to the Pamir, years ago. There are three routes by which it is possible to reach the Pamir: the first from Ladak over the Kara Korum to Shahdula, and then west, either from Yarkand or from a point before you reach that city. For this route a

passport would be necessary from the Chinese Government, which, though much easier to obtain now than it was formerly, is still by no means easy to get, nor, having got it, is there any certainty that there would not be obstacles thrown in the path of anyone wishing to visit the Pamir from the Chinese side.

The second is the Gilgit, Yassim, Chitral, and Badakshan route, but the political difficulties at present put this out of the question.

The third is by the Transcaspian Railway.

I have made two visits to the Pamir, the first in 1888, the second in 1890, and Mrs. Littledale accompanied me upon both occasions. In 1888 I did not know anything about the country or the chances of sport, beyond the mere fact that the Pamir was the habitat of the Poli sheep; but as to which particular district I ought to visit, or what special outfit I ought to take with me, I could obtain no information either in England or Russia. However, I had the good fortune to meet the Rev. Dr. H. Lansdell, who gave me valuable advice as to the route to Khokand.

From the Russian officials we received the greatest civility on all sides; whatever antagonism there may be between the two countries politically, it begins and ends with politics; for socially at the present day there is no nation more popular in Russia than the English, nor do I know any country wherein a man, furnished with proper letters of introduction, will be made to feel more at home than in Russia.

Saturday, August 5, 1888, found Mrs. Littledale and myself camped in a valley, flat as a billiard-table, about two miles wide, which was one vast river-bed of soft shingle, cut up into countless channels, which varied day by day, almost minute by minute, one or two hours of sunshine bringing down a flood like a mill race, which cut new channels and left old ones dry, making that which was a difficult ford in the morning almost dry by night, and moving the main stream maybe half a mile away.

The place was an idyl of desolation; not a shrub, nor a bird, nor a living soul in sight, while the few blades of grass, here and there apparent among the débris fallen from the cliffs above, had a half-hearted air, as if they knew that they were out of place. The mountains on either side were forbidding to a degree. Down their rugged sides dashed torrents from the glaciers above. The head of the valley was blocked by some grand snowpeaks, which reared their proud summits to a height of 20,000 ft. and more. There they stood (and stand) unnamed, unmeasured, and unknown, waiting for some one to conquer their virgin snows.

It had been no easy task to persuade our Kara Kirghiz hunters to come to this place at all. They asked why I wanted to go? They said that there was no grass there, that the horses would die of starvation; and did I think that the 'Gulcha' (the Kirghiz name for Poli rams) would stay in a place where there was nothing to eat! For generations their fathers had been hunters, and did I, a stranger, know better than they?

However, I pointed out to them that we had everywhere found skulls of fine old rams from ten to fifteen years old, and yet we had hitherto seen no ram over five years old in the flesh. How did they account for that? In reply they said that no Kirghiz had ever seen one of the big ones alive. 'Then,' said I, 'come with me and I will try to show them to you,' for I felt perfectly certain that the Poli were not different in their habits from the Ammon and the Bighorn, and that it was only a question of time before we found the old rams in some secluded spot, away from the females; and the event showed that I was right.

We left camp one morning about 4.30 A.M., and rode up the main valley for an hour or so. This brought us to the mouth of a side valley, up which we turned, keeping to the east side of it, so as to be in shadow. The elder Kirghiz, Dewanna by name, soon detected something about two miles away on some high undulating ground across the valley. Dewanna was using binoculars, and though I tried to use my

telescope, my fingers were so numbed with cold that it was quite impossible to hold it steady. After some little scrutiny we all decided that the beasts were arkar—i.e. female Poli—and continued on our course for about another mile, when some extremely likely-looking ground made us pause again to take a good look ahead. By this time some little warmth had come back into my fingers, and I was able to use my Ross's telescope again. After carefully spying over the ground and finding nothing, I turned the glass on to our old friends the arkar. The moment the glass was still, one look was sufficient. Down went the telescope, and I crept forward dragging my pony out

Our camp

of sight, whilst the Kirghiz, divining that I had seen something, promptly followed my example. And what a sight that glass revealed! Twenty-six old Poli rams in a band, and the smallest of them larger than anything I had yet seen! Lucky for us that we had kept under the shadow of the rocks, as but for that we had been in full view of the rams for a quarter of an hour, in spite of which they were still quietly feeding, unconscious of the deadly peril to which they were exposed.

Men who are not sportsmen can hardly realise what my feelings were when I discovered that at last I had in front of me so many splendid specimens of an animal which for years had been the dream of every British sportsman in the East.

Years ago, when in Kashmir, my wife and I had discussed every possible and impossible means of getting at the noble beast, but the more we talked with those most likely to know, the more we were convinced of the hopelessness of any attempt in the then state of affairs, and we had to content ourselves with the thought that when in the Gilgit country we had been within sixty or seventy miles as the crow flies from the inaccessible Pamir.

I may remark here, in passing, that to the Russians Karelin and Severtzoff is due the honour of having brought to Europe the first entire specimens of Poli. I believe the members of the Yarkand Expedition can claim 'first blood' amongst Englishmen.

As I looked at those old rams, some browsing, some lying down, my thoughts wandered back a dozen years to when on the slopes of that stupendous Nanga Parbat in Astor on a misty morning in May, three ibex (the smallest 38 ins.) bit the dust. Again my imagination jumped forward to an autumn in the 'Frosty Caucasus' when three right royal red deer stags fell in almost as many seconds. On occasions like these one's thoughts are always rose-coloured. It is only the red-letter days which come forward. Pushed into the background are the long trying stalks, when perhaps for an hour you have stood up to your knees in an icy stream, not daring to move, for movement meant instant detection : forgotten, too, is that last critical moment when, as your head rose higher and higher above the rock which had been your objective point for hours, your hopes sank lower and lower until the hideous truth became plain to you that the head which you had almost counted as your own had gone never to gladden your eyes again ; or it may be that there was even worse luck to forget, when wind, or light, or a tired man's laboured breathing had to account for a ·500 Express bullet driven by six drachms of powder *just over* a big beast's back !

The rams we had sighted were on the other side of the valley, the bottom of which was about a mile and a half wide,

quite flat and without any cover. To get at them we must either retrace our steps for about two miles, when we could cross unseen, or go forward about a mile. The Kirghiz were both in favour of going forward, whilst I wished to go back, and it was very much against my will that I let them have their own way. The rams were on the lee side of the hill and near the top, which is always a most difficult position; in fact, if the game is within one hundred or one hundred and fifty yards of the top, and the hill is pyramidical in shape (which this hill was not), I think 'it passes the wit of man' to approach them, for from whichever side you try you will find them either with the true wind or the shifting eddy to leeward of you. Try one side or the other, it is a position of nearly absolute safety for the rams.

By keeping behind the moraine of an old glacier a shoulder of the hill at length shut our quarry out of view, and we were able to cross the valley. In the middle of this there was a rapid stream across which the younger Kirghiz (having stripped) carried Dewanna, coming back afterwards for me. Unluckily, when nearly over, my carrier slipped and all but came down, wetting me to the knees in a stream cold as only ice water fresh from a glacier can be. After a stiff climb of about an hour, we reached the top of a small ridge from which we expected to view the rams; but though we 'spied' every yard carefully, we could see nothing of them. All the while I knew that we were stalking on wrong principles, and when at last, after a most careful climb, we found that we had run into an eddy of wind, and that the sheep had vanished, it caused me no surprise.

For several hours after this we walked on slowly, spying every yard as we went, for tracking on this stony ground was hopeless. On reaching a spot where the hill broke off sharply, we lay down and examined the ground, which was very much broken up into little valleys filled with great boulders, the lee side of any one of which was a likely place for the rams.

When the Kirghiz first joined us I told the interpreter to

explain to them the use of a field-glass. Then they all laughed at the idea of finding game with such things; now they were always wanting to borrow them.

For about half an hour we lay spying both with binoculars and telescope, and Dewanna had just risen to his feet saying that there was nothing, when I saw by the younger Kirghiz's manner that he had seen something. I was only just in time to drag Dewanna down, when over a brow below us came a fine Poli, followed by two others, all beasts with good heads. After a few minutes, the three lay close down together near the bottom of a small ravine, and we had a good look at them through a telescope. They were magnificent fellows, possibly out of the big lot which we had seen in the morning.

Of course the Kirghiz wanted to 'drive' the rams, and of course I promptly vetoed the proposition. Why is it, I wonder, that all over the world the natives are so desperately keen about driving? I could easily account for it if the general knowledge of stalking were as limited as that of the Kirghiz, who spoilt several of my earlier stalks by showing themselves behind me whilst I was 'worming' my way up to game, and who seemed quite ignorant of the fatal results of showing oneself upon a sky-line. But it is not only the Kirghiz, for in the Caucasus two men whom I employed, perfect masters of the stalker's art—quite as good as the best of the Kashmir Shikaris (who I consider are at the top of the tree)—were always tempting me to 'drive.' I am glad to say that the only time I was weak enough to yield to their solicitations the drive ended in a fiasco. Taking the younger Kirghiz with me to carry the rifle, and leaving Dewanna to watch and to signal to us the direction of any movement on the part of the rams, I took the precaution to pick up a good supply of small stones to pelt my man with whenever I found him going too fast ahead of me. The fellow had most wonderfully quick sight, so I used to send him on in front, and on previous occasions his excitement had so far carried him away that I had to be perpetually running after him to stop him; and as at that altitude (upwards of 16,000 ft. above sea

level) I found that I could not shoot unless I had been walking with the greatest circumspection, it was necessary to recall him now and again by this simple and easy system of telegraphy.

Keeping well out of sight along the ridge, we found a little watercourse down which we could descend without being seen, and having carefully searched every inch of ground to make sure that there was no other Poli in our path who might spoil our stalk, we crept down to within three hundred yards of where we had last seen our three rams. Here the Kirghiz took off his sandals, while I took the Henry double Express out of its cover, made sure that all was ready, and then handed it back to him, as every extra pound to carry adds to the difficulty of keeping your breath.

I was shod in tennis shoes, with red rubber soles three-quarters of an inch thick, to my mind the very perfection of foot-gear for stalking, as they are perfectly noiseless, will out-wear two ordinary leather soles among the rocks, and are only dangerous on snow or ice.

Softly as mice we crept up the slope of a little ridge on the further side of which we had last seen the Poli. Our man on the hill made no sign, so that all was right so far. A little short of the top, I took the rifle and crept up the last few yards alone. Peeping over the top, I could just see the tip of a horn behind a rock about one hundred yards below. Taking off my cap to place my rifle upon it, for if fired resting on a rock without a pad the jar would send the bullet wide, I cocked the weapon and lay there waiting.

The wind was right and the moment they moved they were at my mercy. Whilst waiting I sent the Kirghiz about ten yards to my right to see if he could make out in which position the big one was lying, as from my point of view they were half hidden, and it was difficult to say for certain which was the big head.

Suddenly up they jumped and stood for one moment looking up the hill. The big one was end on, facing me, but I

had had a good rest, my heart had ceased to beat wildly and my hand was steady, so squeezing the trigger gradually and firmly, the report of the rifle was followed by the loud smack which tells an old hand all he wants to know. Not wasting a look on the big one, I shifted the sights on to one of the others and fired just as he bounded off. Another smack told that that bullet, too, had found its billet, but the beast made off with its companions. On dashing frantically down the hill and up the other side of a small ravine, I saw one Poli standing and looking about him two hundred and fifty yards off. Lying down I tried to take a careful aim, but I found the rifle was pointing ten feet over his back one second and the next twenty feet below him. This was no good, so I lay quiet in the hope that he might be so unsophisticated as to stay there until my poor panting frame recovered its steadiness; but alas! in a few seconds he was off.

However, I was satisfied that he was unhurt, and the wounded one probably lay between us and him, so that I at once took up the search for the beast, the man on the hill coming in now very handily, directing us by a prearranged code of signals.

Presently this man (Dewanna) got very excited and kept signalling 'below, below.' As we were then at the bottom of the valley we were at a loss to know how to go any lower, when out from behind a large boulder came the Poli, very sick indeed; but to make sure I gave him another barrel and rushed up to gloat over my latest prize, measuring 59 ins. along the left and 58½ ins. along the right horn.

I then started up hill back to where the first one lay. On getting up to him I was rather disappointed, as I had thought that he was bigger than his comrade, and I pulled out the tape and began to measure: 'sixty, sixty-one, two, two and a half'—thank goodness, at last I had got a trophy that would hold its own in any company, and one that will still be a comfort, a joy, and a thing of beauty when old Time has so stiffened my

joints as to make this most glorious and exciting of all sports only a memory for me.[1]

Having skinned our beasts and packed their heads upon one pony, the younger Kirghiz, careless of the possibility of a fall and consequent impalement, twisted himself somehow in among the twisted horns on the pony's back, and so, he riding and we on foot, we turned towards camp, warned by the waning glories of the sky, the dark shadows stealthily creeping across the snows, and the little rills frozen into silence, that the Night King was coming, and that it was well to hurry. As we reached camp our interpreter met us, and I think everyone echoed his 'Vraiment, c'est assez grand!' as my first big head was scrutinised.

In 1888 we had wandered about until we found the valley in which the above took place, and then having discovered a good hunting ground sat down to work, with the satisfactory result of fifteen rams bagged, all but four being over 50 ins. and several the right side of 60 ins.

In 1890 we decided to try the Southern Pamir, as all the natives agreed that the further south you went the bigger the heads became. But a visit to the Southern Pamir meant much more elaborate preparation than heretofore, and our modest little caravan of twelve horses all told in 1888 swelled to the considerable number of forty in 1890; for it was not only necessary to take food for ourselves and our men, but also for the animals, and for each horse carrying a load of baggage we had to have an extra horse carrying barley to feed him. Besides this we took four or five horseloads of firewood, for there are long stretches of the Pamir that are absolutely devoid of vegetation of any kind—places where even the travellers 'stand by' for fuel, 'Boortsa eurotia,' is not to be found. Without boortsa life on the high timberless plateaux of Central Asia is indeed hard, for that insignificant-looking plant affords splendid fuel.

[1] This head was not destined to grace my walls, but is now reposing in a palace in St. Petersburg, her Imperial Majesty the Czarevna having expressed a wish to have one of my trophies.—St. G. L.

Green or dry it makes a blazing fire, and though it wants constant attention and soon burns out, where there is no dry dung it is a perfect god-send.

We had made up our minds not to return by Turkestan if we could get across the Hindu Kush, and down into India; but as our chance of getting through was very uncertain, we were obliged to secure our retreat by establishing depôts along the return route, of barley, flour, firewood, &c., all of which entailed extra transport.

We found our tent, though it was lined and had a double fly, so cold and so troublesome to keep upright during the furious gales which even in summer sweep over the Pamir, that on our second expedition we took with us a couple of Kirghiz yourts in addition to this tent, and although the yourts are not fastened to the ground in any way, yet, owing to their being dome-shaped, they never showed the slightest tendency to blow over. Once inside our yourt, a stormy evening had no fears for us, nor had we ever to rush out in scanty garments on a bitter night to refasten some yielding tent-peg.

On the Abchur Pamir there were immense quantities of Poli horns, most of them of very large size, one head which I measured being 69 ins., though even this was beaten by one which was shown to me at Simla by Sir Frederick Roberts, who kindly allowed me to photograph it. The head was given to Sir Frederick Roberts by the Maharajah of Kashmir, and is as far as I know the biggest head on record—length, 75 ins.; tip to tip, 54½ ins.; circumference round the base, 16 ins.

Let me recall one day out of my 1890 expedition, as another sample of Poli shooting I have done. We had camped at the end of June by Victoria Lake, which was still three parts frozen, and after a short and fruitless hunt had recrossed to the Alichur Pamir. The weather was changeable and the wind shifty, but our sport had been fair. One stormy evening I spied three rams a long way off. Before we reached them, a flurry of snow hid them from us, and when the snow cleared we could not see them. We decided that they must have gone over the hill for

MR ST. GEORGE LITTLEDALE'S BAG OF OVIS POLI, 1888

shelter, but on looking for them they unfortunately got our wind, and bolting out from some rocks dashed across an open piece of ground. I put the 200-yards sight up and fired at the centre one, which was a monster, towering above its two companions, and altogether by far the biggest sheep I had ever seen—its horns, I should fancy, certainly measuring something over 70 ins. I saw the dust fly beyond just over its back, and had no time for a second shot before the sheep disappeared in a dip of the ground. I felt low at missing such a grand fellow, but it was a running shot at quite two hundred yards, and a hit would have been more or less of a fluke.

As they were a very long time coming up the other side of the ravine, we went to see what had kept them, and found that the two smaller sheep were waiting for the big fellow, who was lagging wearily behind. As soon as they had got over the ridge we followed them and found their track, which was very bloody. My bullet, instead of going over my beast, must have gone through him without expanding, and it was not long before we found him lying down on a snow bank which was streaked with his blood. Here I could have stalked and finished him, but for the excitement of one of the Kirghiz, who showed himself and made the beast get up again. After this he kept lying down at intervals, travelling a shorter distance and resting longer each time.

The vitality of *Ovis Poli* is something extraordinary. Here was a beast shot through the lungs, as was proved by the frothy blood which poured from his wounds, and yet he went eight hundred or a thousand feet up a snow slope. Having allowed him to get out of sight we followed him, but just as we reached the top of the slope a heavy storm coming on obliterated everything in six inches of fresh snow. As soon as the storm was over, numbed and cold though I was, I tried to follow by kicking the new snow away with my feet till I found blood, but eventually I lost the ram and had to leave him. It was a terrible disappointment, for I fear I shall never look upon his like again. My attention had now to be turned to my Kirghiz companion, who had

been taken violently sick and lay there unable to move. I had no brandy to give him, and not even a coat to wrap him up in, for we had left our sheepskins at the bottom of the hill. However, I rubbed his hands vigorously, and after a time he recovered sufficiently to descend leaning upon my shoulder. I believe it was nothing but the height which affected him, and, extraordinary as it may seem, two other Kirghiz who regularly spent four or five months in every year on the great Alai, as their forefathers had done before them, had been completely knocked up a few weeks before this by the two or three thousand feet additional elevation at which they found themselves with me, and had been compelled to leave the Pamir. They are a careless happy-go-lucky race, these Kirghiz, easy to offend as children, but as ready to 'make it up,' and quite harmless if well handled. On life they set but little store; but the words of one old chief as he handled my rifle are still in my ears. 'Ah,' he said, with a sigh, 'and even the man who made that gun must die.'

CHAPTER XIII

CAMPS, TRANSPORT, ETC

BY CLIVE PHILLIPPS-WOLLEY

IT is not possible to devise a camp outfit which would suffice in all climates and under every condition of travel, and for that reason a few notes on the special outfit necessary for each country have been given where requisite.

But, although different climates require different camp equipment, there are many things common to camp life all over the globe, and a brief sketch of the needs and shifts of such a life in temperate, tropical and arctic countries may at any rate serve as a basis upon which to found a plan of campaign in any country.

It must be understood from the outset that these notes are for the hunter and not for the scientific explorer, whose needs are excellently cared for in the Royal Geographical Society's 'Hints to Travellers,' and that the beau-ideal hunter is he who can accomplish most with the least assistance from anyone else. The most perfect outfit is that which, while it contains all things really necessary to success, includes no superfluities, and is in the highest degree portable.

The cost of hiring help in different countries has of course an immense effect upon the nature of the camp equipment employed, and what would be but a beggarly outfit in India where you pay your beaters *3d.* per diem would be extravagantly luxurious in British Columbia where you pay your Indians 1½ dollar a day.

But to succeed all the world over in big game shooting, a man should be able not only to find his own game and kill it when found, but to skin it, pack it, pack his own food on his shoulders or his horse's as the circumstances require, cook his dinner, choose and pitch his camp; in fact, he should be able to do everything which he wants done for himself without aid from anyone else.

It by no means follows that because a man *can* do these things he will be obliged to do them, but there are times in every hunter's life at which the almighty dollar fails him, and then it is that the beauty of being able to help himself becomes apparent. It is not a bad plan just for once (say for a single day) to do entirely without extraneous aid. At the end of the day you will probably find that a good many things, from tying a bowline knot to lighting a camp fire, look a good deal simpler than they are.

We will consider then, first, what are the essentials of camp life and camp outfit in countries where the temperature ranges during the shooting season from 80° above to say 10° below zero, a fair sample of which may be found on the *mainland* of British Columbia.

One of the first maxims I would lay down is, bring with you all the most important items of your outfit, rifles, ammunition, tents, &c., even though the cost of transport be heavy: but, on the other hand, do not load yourself with less important items, such as rugs, blankets, cooking utensils, saddles and smaller things. You can get most of the ordinary necessaries of life in every country you enter, and in nine cases out of ten the native manages to evolve the article best suited to the daily needs of the country he lives in and the life he leads, e.g. the so-called Mexican saddle or the Indian moccasin. There is another thing worth considering, and that is that if you must spend money somewhere upon your outfit, it is as well to spend it where the spending of it may earn you the goodwill and assistance of the people amongst whom you are going to hunt.

THE CAMP

The first matter to be considered upon reaching your starting point, the point I mean at which the locomotive leaves you, is the question of transport, a very serious matter to the man who has been 'dumped' down for the first time in his life at a frontier station with a huge pile of belongings and not even a friendly porter to carry them under shelter for him.

In North America (indeed, in most countries) the commonest method of transporting freight from one point to another in regions where the railway does not run is by pack animals, for which reason we will treat of 'packing' with pack ponies first.

In all the countries known to the writer the cheapest way is to buy your ponies, taking your chances of selling them when you don't require them any longer. Hiring your animals is an expensive plan, especially in America, where the hire of a pack pony is at least one dollar per diem, whereas his cost would not exceed thirty dollars. Thus even if you gave your ponies away (and you cannot always do much better) at the end of a two months' trip, you would have saved thirty dollars by purchasing outright. In buying your pack animals don't leave the purchase of them until the last moment. If you do, there is no one in the world who better understands the art of extracting the highest price from a man who *must* buy than the 'untutored savage.'

Choose animals of short cobby build rather than those which are more 'leggy,' and in addition to all the ordinary precautions observed in dealing with horse-flesh, take care to examine your purchases to see whether they have ever had sore backs. If you find scars, however well the wound has healed, don't buy the pony, as backs which have once been sore are extremely apt to break out again at the first opportunity.

You may estimate the number of ponies wanted for your expedition by the weight which you require them to carry, allowing from 150 to 200 lbs. to each pony, and although professional packers will sometimes put as much as 400 lbs. upon

a beast on a road, 200 lbs. is a full load for such a creature as the ordinary cayuse on such trails as those which generally lead to game countries.

Having bought your ponies and hired a man as camp cook who can pack and look after the beasts, take precautions against losing your animals. Of course your packer ought to do this, but he won't. Buy picket pegs and ropes for your saddle-horses, and good leather hobbles for the pack animals, as well as a bell for the leader of the pack train, and see, *personally*, that for the first few nights, at any rate, *every* horse is hobbled or picketed, including even your hunter's horse, in spite of his protestations that 'that cayuse won't stray'; and see, too, that one of the horses has the bell on at night. During the day you can take the bell off or silence it by shoving a fir cone into it, or some such simple device, if you hope to see game along the trail; but at night, insist upon the bell and the hobbles being worn, and in this way even if your beasts have only poor feed they won't stray far, whilst if they do the bell will help you to find them. As I pen these lines I am as sure that some one of my readers will curse his luck for having neglected this advice as I am that death and the tax-man will arrive in due season. In passing, I may remark that the man who takes the trouble to silence his pack train's bell and his packers' mouths, whilst he rides half a mile ahead of his train when on the march, will secure many a shot which would otherwise never have fallen to his share.

In picketing your horses use a bowline knot, see that the loop made will run easily round the tree to which each horse is tied if you are not using a proper picket, and in any case see that there are no bushes or stumps in his way round which he can get tied up in the night.

Next to your ponies your pack-saddles are the most important part of your equipment, and though you can no doubt pack either with ordinary pack-saddles, or with *parfleches* (mere leathern envelopes depending from either side of the pony), still the best of all the many contrivances for packing

is, to my mind, the *aparejo*, an arrangement of Mexican origin obtainable for about twenty-five dollars all over America.

With good aparejos, sweat-pads and saddle-blankets of stout material, and a man who knows how to put them all on, there need be no sore backs, and very few halts to rearrange packs during the longest trip in the roughest country.

Be careful, however, to see that your aparejo is long

Cinch him up

enough for your beast, otherwise you will get him so chafed under the tail as to be unable to work. See, too, that your horses get a rough rub down before being saddled, and that your blankets are ample and well put on. Just as there are many kinds of pack-saddles, so are there many ways of tying on your packs; but one good way is sufficient, and that known as the diamond hitch has been adopted almost unanimously as the best by the men who live by packing. Here I might

give directions for the tying of the diamond bitch, but the object of this book is to supply information useful to the hunter, and written instructions in the tying of the diamond hitch would not fall into that category. A man may learn to pack by practical experience and with pack, pony and an expert before him, but I do not believe anyone could learn from printed directions. Should anyone care to try, an excellent series of articles upon the subject, by a thoroughly practical man signing himself 'Yo,' may be found in 'Forest and Stream' for June 2, 1887, and following numbers. Let your camp man be a practical packer, would be my first advice to anyone meditating a shooting expedition in America. To anyone who had ever made such an expedition such advice would be unnecessary. There should be no difficulty in finding a man who can both pack and (in a rough way) cook. I was going to say that any fool could cook sufficiently well for a hunter's camp, but the recollection of beans fried without boiling, a vivid memory of some of the abuses of baking-powder, and a certain black-currant pudding boiled without basin or pudding-cloths, make me pause.

In addition to the aparejos, sweat-pads, and saddle-blankets before mentioned, all of which go under your packs, you must provide yourself with what are known as *manteaux*, i.e. squares of stout waterproofed canvas which are thrown over the packs to protect them not only from rain, but also from pointed boughs and such like which would otherwise tear the packs in passing through a timbered country. With these, cinches, sling ropes, halter ropes, and a good supply of spare rope of the kinds known respectively as half- and quarter-inch, the sportsman should be able to transport all he requires through almost any country.

As to the packs themselves, I would recommend that as far as possible everything should be put up in stout canvas bags and labelled. This plan saves infinite trouble in the long run. Some things of course must be carried in tins, and among these should be your matches, which will thus be protected

from damp, and will have no chance of making dinner a horror, as the ordinary sulphur matches loose amongst provisions have a habit of doing. Even for matches a stout well-corked bottle is better than the best tin.

Packs are generally arranged as two side packs, and one top pack, and square side packs (in wooden boxes) with blankets, tents, and such like bundles for top pack seem most convenient. Round side packs are apt to shift.

Above all things see that your side packs are about equal in weight and hang about level. The contents of the packs must depend to a great extent upon the tastes and means of the hunter, but for simple men travelling in a difficult country the list of necessaries given below should suffice for two sportsmen, two gillies and a cook during an expedition of two months' duration.

I have allowed a gillie or hunter to each sportsman, as well as a camp cook between them, although my own experience has been that your greatest happiness and best success begin when you have learned to hunt alone. That two make more noise than one; that your own eyes (not another's) are the best eyes for you to use; and that a white man with practice is better than any red skin, are articles of faith which will be approved by experience.

However, of this more in another place. The accompanying list of stores, &c., has been based upon the lists of things used by the writer in former expeditions, in none of which (at any rate since 1883) has there been any running short of supplies.

Provisions and other requisites for five men for two months

		lbs.		lbs.
Flour	6 sacks	= 300	Coffee	= 12
Yeast-powder	18 tins		Tea	= 8
Bacon		= 100	(or Cocoa	= 12)
Dried apples		= 50	Pepper	= 1
Sugar		= 50	Salt	= 30
Beans		= 50	Onions	= 60

Worcester sauce
Matches
Candles (three dozen composite)
Soap
Tobacco
A small can of oil for rifles
Spare rope
Two dozen horse-shoes, nails, and a shoeing hammer
A few yards of linen for dish cloths
Ten pounds of powdered alum for curing skins
Two spare deer-skins for patching moccasins; some waxed thread, which must serve your turn until you can get some sinews, to sew your moccasins with
A cobbler's awl and needle
File
A housewife containing buttons, thread, needles, darning needle, wool, &c.
A little ingenuity and abundance of good temper

In this list I have only allowed enough bacon for men who know how to hunt in a country where game is to be had for the hunting. Of course if game is scarce, more supplies might be needed, whilst equally of course, if the country is very difficult and the temptation sufficient, keen men should be able to get along with half a pound of flour and four rashers of bacon per diem, and even this with tea, blankets, rifles, cartridges, &c., will be found quite enough to carry in a mountain country with no one to help you.

I have suggested cocoa as an alternative for tea, for I find that the latter, as it is generally brewed in camp, is intensely indigestible, and is apt to keep even a tired man awake at night. Cocoa, on the other hand, is refreshing, it is almost as effectual a 'pick-me-up' as a whisky and soda, and does very well in its place. For men who do not stop to lunch, cakes of chocolate or raisins are recommended, as being very portable and nutritious.

My second list of necessaries consists of kitchen gear, and although it may easily be reduced to a 'billy,' a frying-pan, and your fingers if needs must, it is as it stands about as small as is compatible with comfort. Cups, plates, &c., should all be made of what is known as 'granite iron,' as this material is very strong, will not crush like tin, and retains heat a long time,

an important point when your meals are taken in the open air of an October evening in the mountains.

Kitchen gear

One nine-inch iron pot with a 'nest' of three smaller pots inside ; these should all be 'tinned' or enamelled inside
Two tin milk-pans for kneading dough in
Two coffee-cans or 'billies'
Two frying-pans to make dampers and fry bacon. Have these made with folding handles
Five soup-plates, five tea-cups (both plates and cups to be made of enamelled iron)
Five knives, five forks, five soup-spoons, five tea-spoons, one meat-knife, a big cooking fork, one small meat saw
Two axes and two spare axe-handles

Almost of more importance than either food or kitchen gear is the sportsman's 'sleeping outfit,' if I may use the jargon of the camp.

The common A tent is the one most used in America, but probably there is nothing better than that known as Whymper's Alpine tent, made of Willesden canvas, as recommended in 'Hints to Travellers.' For extremely rough work I have used a little 'tente d'abri' into which we had to crawl on our hands and knees, but which held two men, kept them dry, and weighed with poles, pegs, ropes, and a bag to pack it in, only nineteen pounds.

I am inclined to think that even this weight might be lessened if required. But whatever the tent you use, you should in all cases have a floor to fit it, rather larger than the ground covered by the tent, and made of some stout waterproof material. This floor may be made to attach to the sides of the tent if so desired.

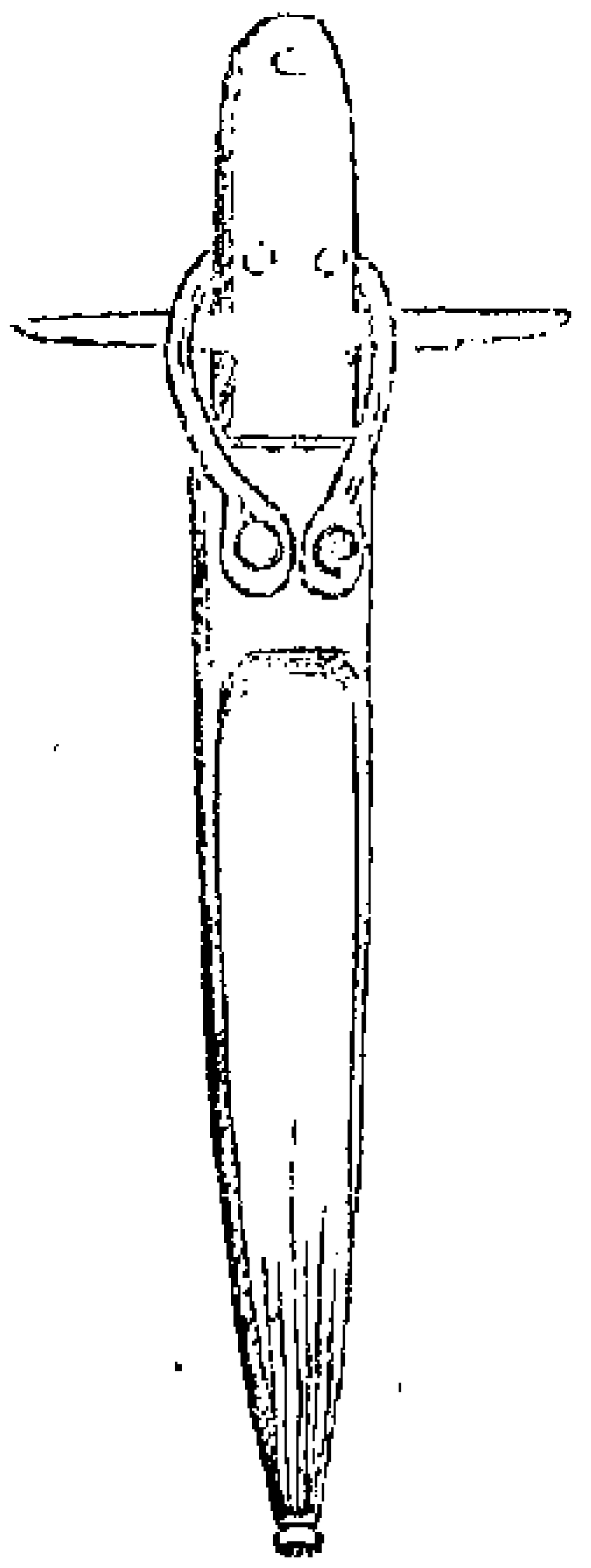
A sleeping bag or blankets must be taken for each person, and if blankets are used, three pairs of four-point Hudson Bay blankets if properly arranged will suffice to keep a man fairly warm, even with the thermometer 10° below zero. But they

must be properly arranged, and to do this one pair of blankets should be sewn up at the bottom, along the whole of one side, and halfway up the other side, the other half to be fitted with tapes or buttons. This makes a kind of bag which effectually prevents a man from throwing off his clothes in his sleep, and keeps out those bitter little draughts which otherwise so annoyingly creep in and dispel the soundest slumbers. An inflatable air-cushion is light to pack, and handy either as a pillow or as a seat in camp. The air cushion makes a better seat than pillow, for which the writer always uses a canvas bag packed with spare clothes, flannels, &c., carried inside the roll of blankets. The sleeping bag made of blankets, with an outside covering of tarpaulin to lace up over the blankets, and with a hood or pillow-case of tarpaulin attached to hold pillow or canvas clothes-bag, is the most convenient outfit of the kind for America. Before leaving the subject of beds, a subject of the utmost moment to the hunter, let me point out that one of the most comfortable and simplest of camp bedsteads may be made thus. Let your *manteau* measure 6 ft. 6 ins. by 4 ft., and let it be made of the strongest waterproof canvas, two pieces of equal size being sewn together so as to make an endless sack. In this form your *manteau* will do duty as a cover for the packs by day, and at night you can cut two thin poles about 7 ft. 6 ins. long, pass them lengthwise through this endless sack, take two logs about a foot in diameter and 5 ft. or more in length, and cut notches in them 4 ft. apart; then set one at your feet and one at your head, stretch out your *manteau* and rest the ends of the poles in the notches, and in ten minutes you will have made yourself a spring mattress above the reach of the damp. If, however, you are content with a brush bed—and the sweet aromatic balsam boughs should be good enough for any man—cut only the smaller boughs and arrange them in rows, the points of each row overlapping and covering the thick and hard butts of the row above. Hemlock makes the best of all bedding, and keeps out damp better than any other brush. It is a good plan before finally arranging your bed to lie down on

it, find out where your hip-bone comes, and dig out a hollow for it to fit into. Anyone who has slept upon a hard and absolutely level surface will understand why this is recommended.

Finally, as to clothing, I have ventured to recommend a list of simple necessaries, more as a hint to those preparing for an expedition than as a rule for their guidance. In his choice of clothes, every man will to a certain extent follow his own fancy, but there are some few things essential to health, and others essential to success. For still hunting in timber I consider moccasins, or at any rate tennis shoes, essential. For a tender-footed man tennis shoes with thick red india-rubber soles are the very best of foot-gear. Except that you cannot cling with them as you can with the moccasin, they are nearly as good as the latter, and certainly save your feet as you come down hill, among sharp loose stones, in the dark; but they are hard to repair, and impossible to replace in the woods. Flannel is the best thing to wear next to your skin, and a good supply of dry flannels to put on when you come in at night is of the utmost importance. A pair of 'rubber shoes' to slip on in camp is well worth carrying, so that if you are obliged to go out in the snow or slush after you have made yourself comfortable for the night, you need not wet your feet again. Let your clothes be of some neutral tint; my own especial weakness is an Indian hunting-shirt made as plainly as possible of tanned deerskin. The colour of this is excellent; the material is very light and tough, and when you top a ridge to which you have painfully climbed for half an hour, the bitter wind which meets you does not go through a buckskin shirt as easily as it does through tweed or homespun. In wet weather—i.e. in real drenching rain—such a shirt is not as good by any means as tweed, as it then becomes exceedingly cold and unpleasant to wear. A broad belt of webbing (not of leather, for leather cuts you) to contain your cartridges may be used over the shirt, if it has not a great brass fastening in front as most

belts have. The object of this fastening I suppose is to reflect the sun's rays and make a dazzling spot of light on the abdomen of the hunter, about as useful in attracting the attention of every living thing as anything which the ingenuity of the gentlemen who sell 'sporting goods' could contrive. Metal buttons, metal watch-chains, uncovered rifle barrels, and even the end of your stalking glass, will reflect the sun's rays in the same dangerous manner, so that though you may be otherwise unnoticed, the attention of your quarry will be drawn to what appears to him to be a little star amongst the grass on the other side of the ravine. Added to the dangers of their appearance is the danger that if you wear any metal trappings about your person, they may ring against one another terribly loud and clear just at the moment when even the beating of your own heart seems unwarrantably and absurdly noisy. For these reasons avoid metal adornments; keep a loose cover over your rifle barrels, be careful not to catch the sun's rays with your glass when spying, use a watch-chain of buckskin, and don't carry a lot of loose change in your trousers pocket.


Knife fastening

Attached to your belt will probably be a knife for administering a *coup de grâce*, and for skinning. If you would not lose it, adopt some such plan for securing it as is suggested by the accompanying woodcut. None of the ordinary spring fastenings are proof against the rough usage of the hills.

If you wear knickerbockers, have them made loose at the knee, so as not to hamper you in your stride up hill, or wear them *unfastened* at the knee; but though less smart in appearance, ordinary tweed or flannel trousers, with the bottoms tucked into a stout pair of woollen socks, are as workmanlike as anything ever made.

Whatever you do, don't wear canvas overalls, although you

may be strongly advised to do so. I wore a pair once, and in a week they were so ragged that I had to borrow a *petticoat* in which to return to civilisation, and, moreover, they are not only easily torn, but they emit a strident scraping sound, whenever a twig touches them, which can be heard very far off.

Loose buckskin gloves sound rather luxurious wear for a hunter, but the hardest Siwash wears them; and as your hands have often as rough usage among the rocks as your feet, they are necessary. Below is a list of clothes, &c., for a two months' trip in temperate climates.

Clothing for two months

Two tweed suits
One buckskin shirt
Two tweed caps
Four flannel shirts
Four pairs of flannel drawers
Six pairs of woollen socks or stockings
Moccasins: the number of these depends entirely upon the nature of the shooting. After ibex, I have worn out a pair in a morning, but for ordinary work a pair of good thick moccasins should last four or five days
Eight handkerchiefs: not white, but some dull colour which will not attract attention from afar, if inadvertently pulled out in sight of game
One pair of short waterproof boots (gum boots)
One waterproof cape, such as is made by Cording; an armless contrivance, very light and portable, used I think by cyclists
Three pairs of blankets, one waterproof sheet, one air-cushion
One belt of webbing for cartridges
One pair of loose buckskin gloves, one pair of woollen mits
One boating sweater

Having now enumerated most of the essential items of a camp outfit, it may be as well to sketch roughly the ordinary routine of a day's march with pack ponies.

In a well-ordered camp someone should be stirring just as the stars begin to lose their brilliancy and to fade before the

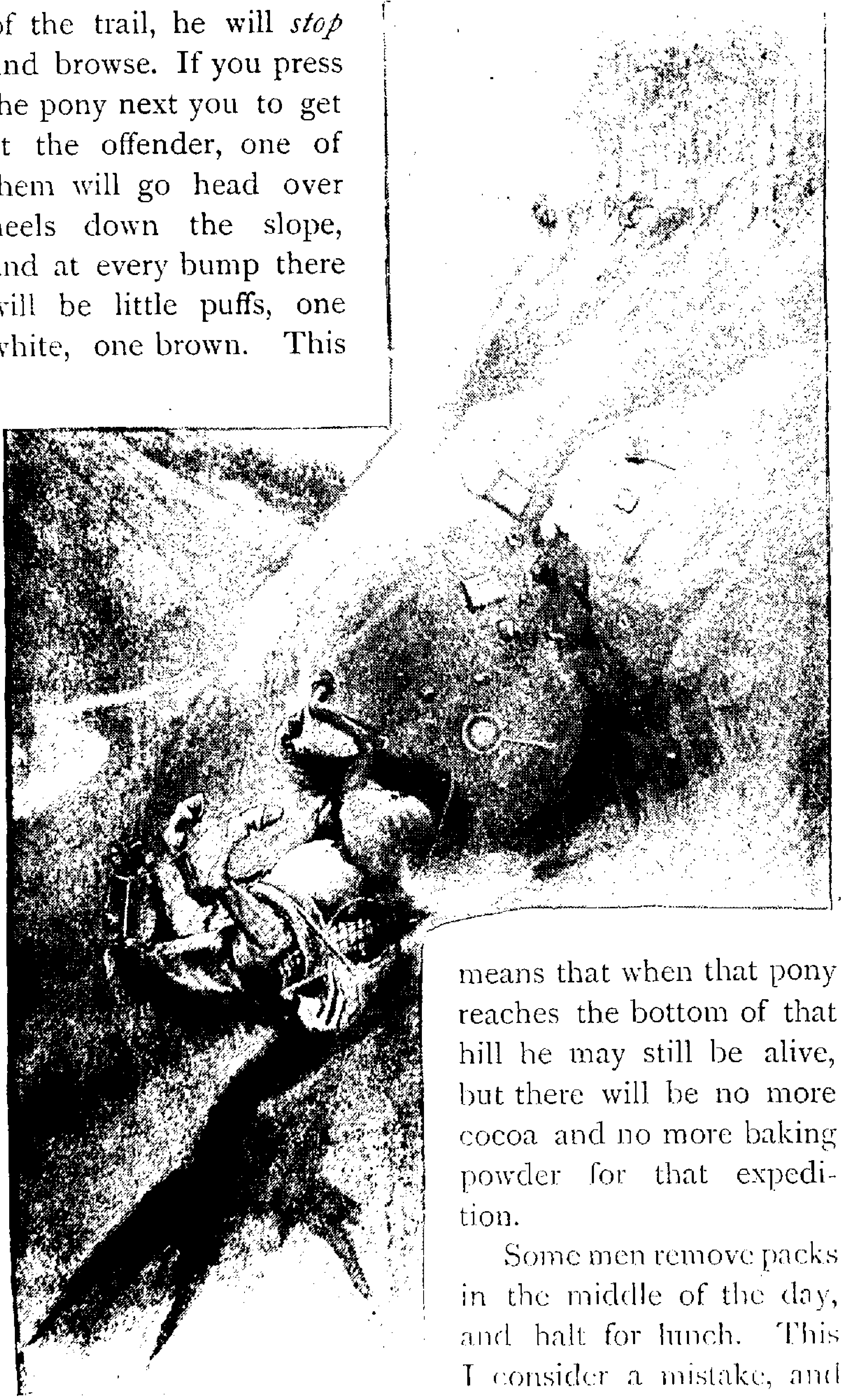
coming of day. An early start is most important, as it goes a long way towards ensuring an early camp, and that camp should be made early whilst there is still plenty of daylight is of vital importance to everyone with the expedition. The discomforts of camping in the dark only require to be tried once to be avoided for the future.

Whilst one man lights the fire and gets the breakfast ready, let another go for the horses, and a third put the beds together and make the packs ready. Save time whenever you can, for unavoidable delays are all too frequent with a pack train. A cayuse is not as other horses are. When you have sought animals sorrowing, in the chill dawn, and found them *hiding*, in a long line one behind another with their heads down, behind a bush no bigger than a respectable cabbage, or have watched your bell-horse roll his bell in the sand, shake himself to see if it will ring, and then trot away contented, you will know more about cayuses, and agree that they are the hardiest, most sure-footed, and 'meanest' of all created beings. See then that you get them together early in the day, and have the packs on their backs and 'all set' within half an hour of the time at which you finish your breakfast.

When you have the ponies packed, some one of the hunters may ride well ahead, but the man who 'leads out,' i.e. guides the pack train, should never ride far ahead. If he does, the pack animals will at once begin to stray. The best pace to travel at is a fairly brisk walk; anything more than this generally disarranges the packs and necessitates halts to rearrange them, or causes sore backs. From fifteen to twenty-five miles a day, according to the character of the country to be ridden through, is an excellent day's work for pack ponies, and from two to three miles an hour a fair pace to travel at.

Keep your temper in driving pack ponies across a side hill, or along a steep and narrow trail. Pack ponies are as mean as —civilised words won't express their 'meanness'—and when a pony knows that he has another between himself and the whip, and that the whip cannot reach him owing to the narrowness

of the trail, he will *stop* and browse. If you press the pony next you to get at the offender, one of them will go head over heels down the slope, and at every bump there will be little puffs, one white, one brown. This



'Good-bye to the groceries'

means that when that pony reaches the bottom of that hill he may still be alive, but there will be no more cocoa and no more baking powder for that expedition.

Some men remove packs in the middle of the day, and halt for lunch. This I consider a mistake, and a waste of time. An

early camp, say at four o'clock, is better both for horses and men.

In choosing your camp consider first these points : water, food, fuel, and shelter from wind and from the sight of such game as may be in the neighbourhood. As to this last point, it is as well not to allow fires to be lighted or wood chopped until a careful survey of the neighbourhood has been made from some adjacent height, especially if the camp has been pitched in the district which you mean to hunt. Not long since my friends and myself had the mortification of seeing the largest band of sheep I ever saw move away while we were stalking them, not because they detected us, but because they could hear the ringing strokes of our men's axes in the valley below. A camp without feed for the horses is the worst of all camps, and luckily occurs very rarely. If there is any likelihood of such camps being unavoidable, it may be necessary to carry grain for the horses, although many 'cayuses' will not at first eat it, and frequently when they do eat it suffer from lampas and other ailments consequent upon a sudden change of diet. Lancing the bars of a horse's mouth with a sharp penknife will procure relief from lampas, which is probably the commonest complaint amongst pack ponies. In camping in America, beware of camping near burnt timber—that is to say, so near as to be in danger from a falling tree, a constantly recurring risk where huge trunks are burnt almost through, and high winds are common.

Whatever you do, do not camp on old Indian camping grounds. Indians rarely leave anything worth having in a camp, but they do leave things worth avoiding. Again, don't be tempted to use an old horse-blanket to put over your feet on a very cold night. Men will tell you that the insects which infest animals won't touch men. I remember one unfortunate party which owned a horse suffering from the third plague of Egypt, and owing to a careless use of one of that horse's blankets the plague passed on to the horse's rider. The woodticks which infest the woods in early spring are as omnivorous as the insects

before alluded to. When once these creatures have buried their heads in your flesh they should be removed with care. If you leave their heads in, an ugly sore may be the result.

Arrived in camp, let it be your first care to see that the horses are watered, hobbled and turned into the best 'feed' in the neighbourhood; see that the packs are secured against rain, and that an ample supply of wood is cut for use during the night. In dealing with Indians don't do too much for yourself, however competent and willing you may be. The majority of Indians are very apt to encourage a man willing to help himself, by allowing him to do all the work.

Give men and horses a complete rest every Sunday, and utilise part of the day for looking through and taking stock of your stores.

There is still another list of necessaries to be added to those already given, but luckily it is only a very short one. As illness may possibly visit the hunter's camp, he must be prepared for it, and a few simple remedies for the ills most likely to befall him are worth providing.

Quinine for low fevers, aperient medicine of some kind (podophyllin pills for choice), and an ounce of laudanum in case of diarrhœa or colic, together with a few mustard plaisters, a roll of india-rubber bandaging, and some diachylon plaister for cuts, have always proved a sufficient medical outfit for any party to which I have belonged.

The quinine, if employed as a preventive measure, may be taken in three-grain doses, but in case you are too late to ward fever off double the dose.

Of laudanum twenty drops in water, when in pain or purged, is a fair dose.

But with average luck no big game hunter ever gets ill until he returns to civilisation and high feeding. Then, alas! his troubles begin.

CHAPTER XIV

A FEW NOTES ON RIFLES AND AMMUNITION

BY H. W. H.

Express Rifles.—These are usually made of five different calibres—viz. ·360, ·400, ·450, ·500, and ·577—and are called 'Expresses' on account of the high velocity imparted to comparatively light bullets by the heavy charges of powder used in these rifles. Many sportsmen are under the impression that all Expresses of the same bore are practically the same—at any rate, as far as their power, velocity, &c., are concerned—and look upon, say, a ·500 Express as a fixed quantity. No greater mistake could be made. Take two ·500 bores, apparently alike, and the one may be a powerful and effective rifle, and the other quite uncertain, at any rate against the larger kinds of even soft-skinned animals. The reason of this is that the first is rifled and sighted for, and constructed to carry, a fairly long bullet weighing about 440 grains, and having a comparatively short hole in front (see figs. 3 and 4), while the latter fires the ordinary short bullet, which has a relatively larger hole in front, light walls and a thin base (see fig. 1), the result being that when it is fired at, say, the shoulder of a powerful tiger or bear, the whole of the bullet will probably break up into small pieces, causing a big flesh wound, but no part of the bullet has sufficient weight and momentum to penetrate through the bones or powerful muscles of the animal so as to reach any vital part. Unfortunately, the higher the velocity of the projectile, the more the bullet breaks up; con-

sequently the short range at which such game is usually killed tells still more against this type of bullet for such sport.

The short Express bullet may be considerably improved, and greater penetration obtained, by having the hollow shorter and tapered (see fig. 2).

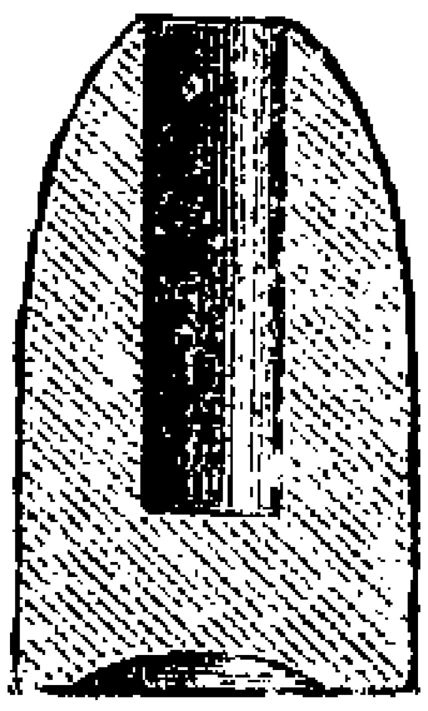


Fig. 1.—340 grains

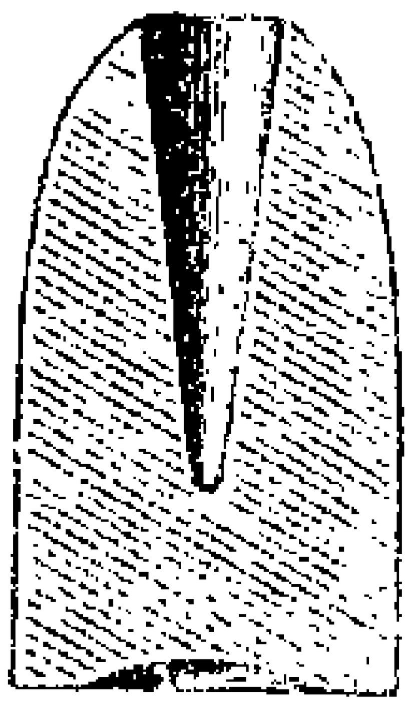


Fig. 2.—360 grains

Rifles constructed for these short bullets are decidedly inferior to those arranged for the longer projectile.

Fig. 3 shows the long ·500 bullet with a heavy fuse.

Fig. 4 shows the same bullet with a small taper hole.

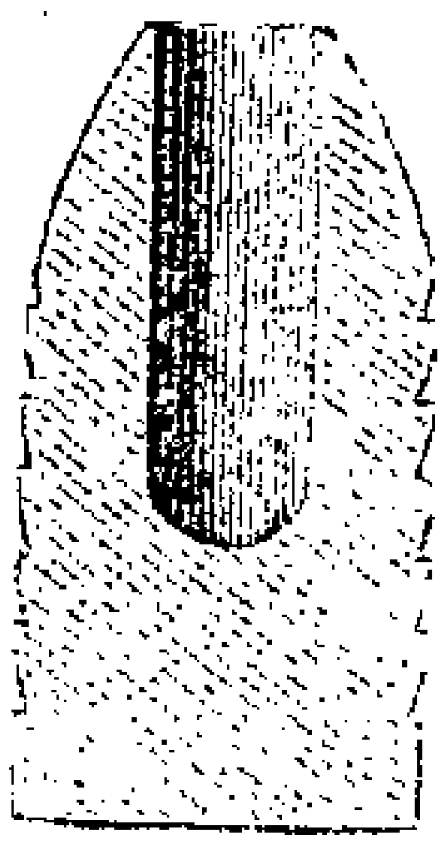


Fig. 3.—440 grains

Fig. 4.—460 grains

It is certainly now for the most part acknowledged that rifles firing this type of bullet are much more trustworthy, giving as they undoubtedly do increased penetration and a more smashing blow. The front portion of the projectile generally breaks up in the animal shot, and the base part, having sufficient energy remaining to pass through the body, will nearly always be found under the elastic skin upon the other side. These rifles have the further advantage of giving accurate shooting at

comparatively long ranges where the ordinary Express would fail.

Figs. 5 to 10 show some specimens of this type of bullet (·500 and ·577 bore) taken from under the skins of tigers, after having passed through the animals, proving the great velocity and killing power of this form of projectile, and demonstrating that the whole energy of the charge had been effectually utilised.

A double ·500 rifle to carry the lighter bullet may be made

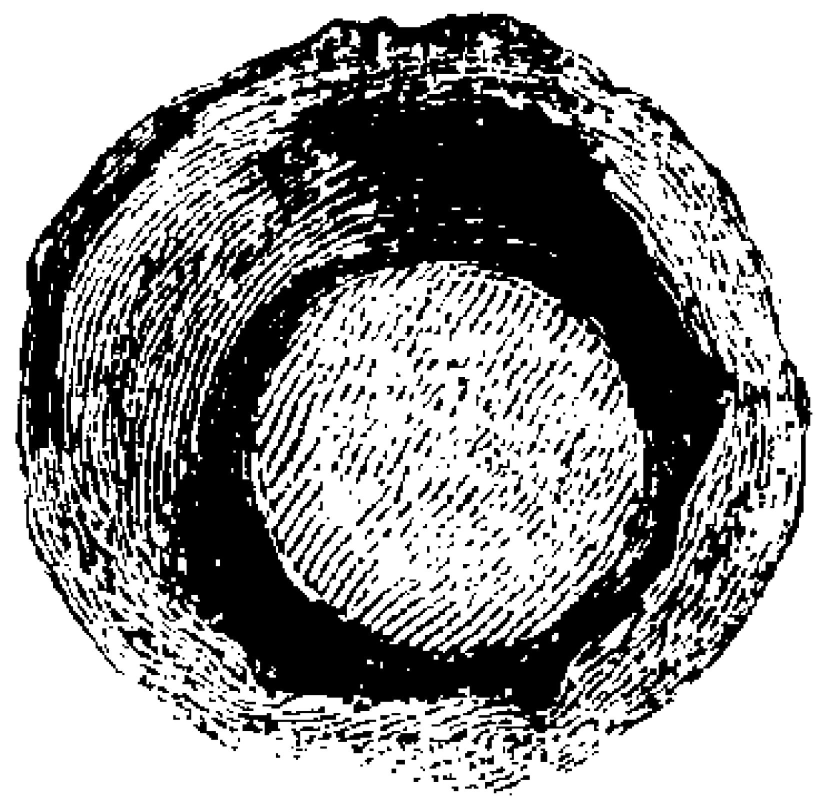


Fig. 5

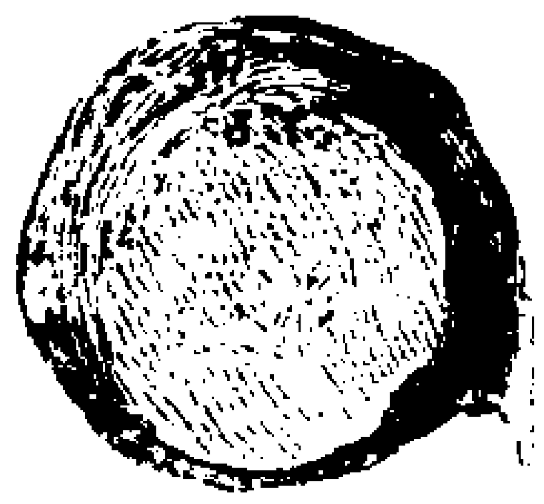


Fig. 6

Fig. 7

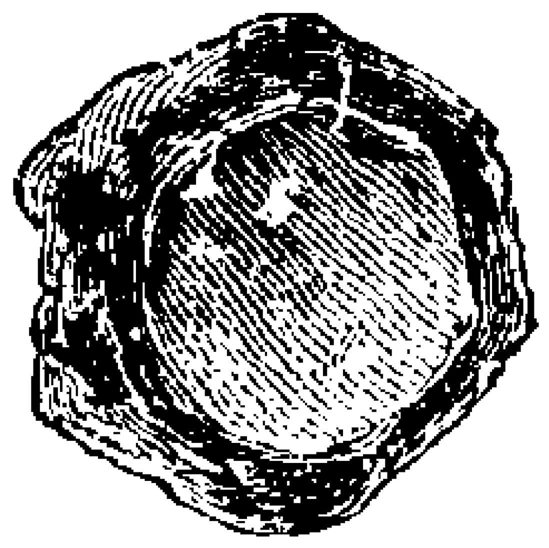


Fig. 8

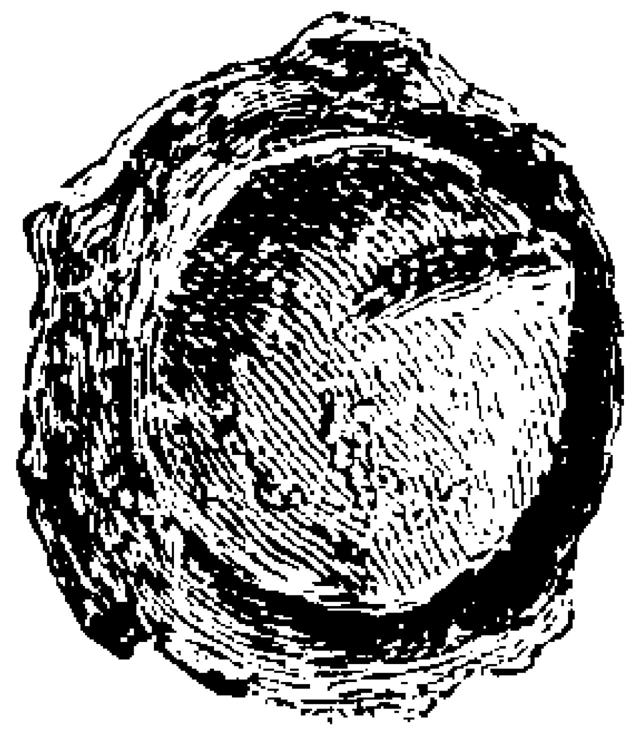


Fig. 9

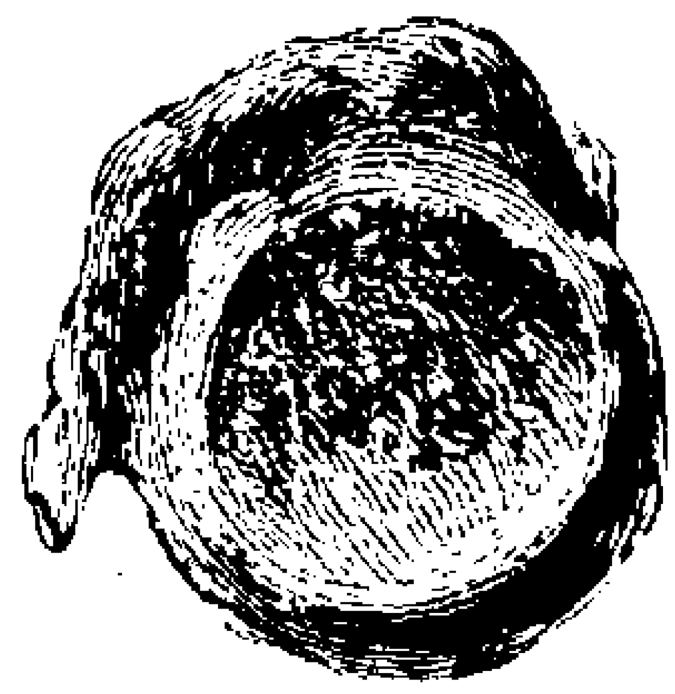
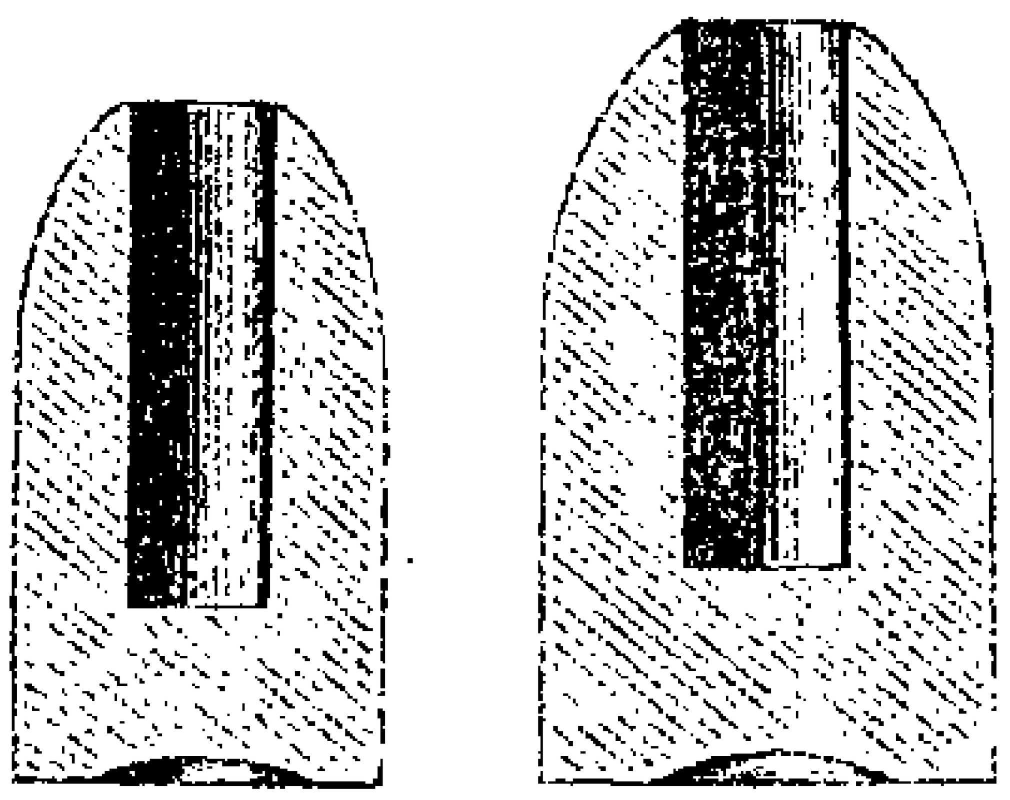


Fig. 10

to weigh about 9 lbs., while to carry the longer and heavier bullet the weight should be nearer 9½ lbs. But when the increased power and penetration obtained are taken into consideration, probably few sportsmen will object to this slight extra weight. A crushing blow that may be *depended upon* is what is required, and reliance cannot be placed (except, perhaps, for deer stalking) upon the short, light bullets so much used. No doubt a good deal of game is killed with the light bullets, even up to and including tigers, &c.; but much has been lost, and many accidents have taken place, in consequence of the bullet breaking

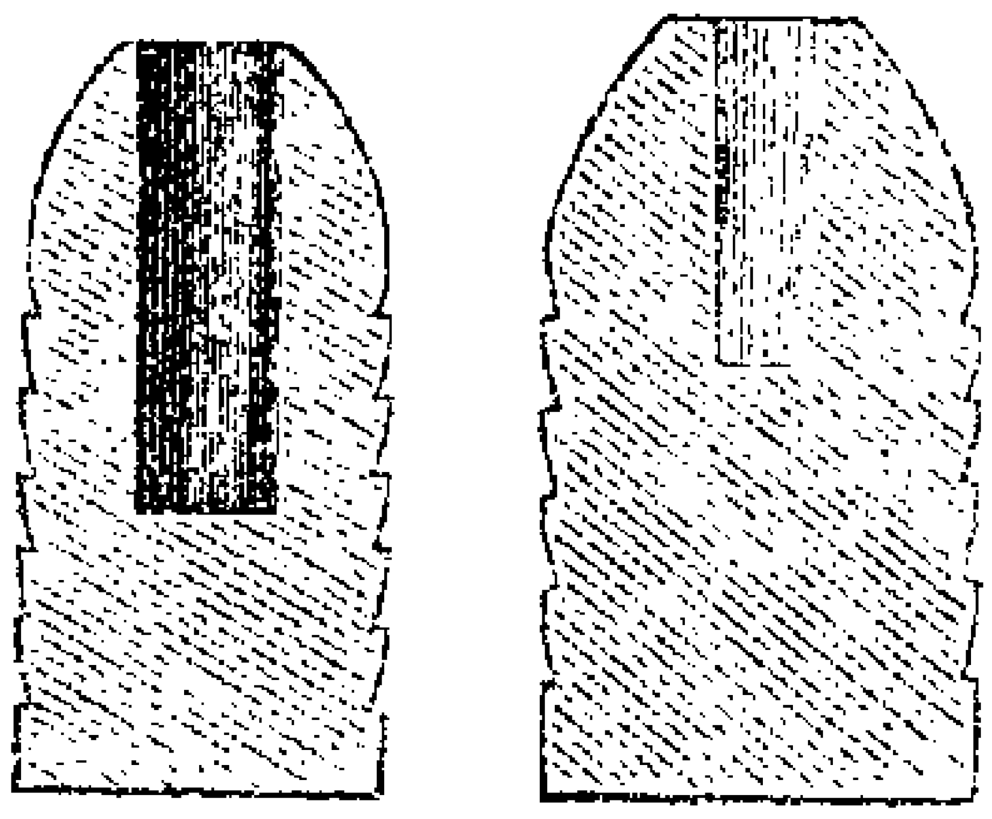
up too soon, causing only a flesh wound, and not having sufficient penetration to reach a vital part of the animal shot. The above remarks apply both to ·450 and ·577 rifles, but especially to the latter, so without going into further details illustrations are here given of the light ·450 and ·577 bullets generally used (see fig. 11), and the longer ones now recommended (see fig. 12).

Since Sir Samuel Baker has so strongly recommended ·577 6-dr. rifles, they have become much better known, and are now much more used than formerly. There can be no question that when fired with proper bullets they are very effective weapons, even against the largest kinds of game. Of



·450 270 grains — ·577 455 grains

Fig. 11



·450 340 grains — ·577 625 grains

Fig. 12

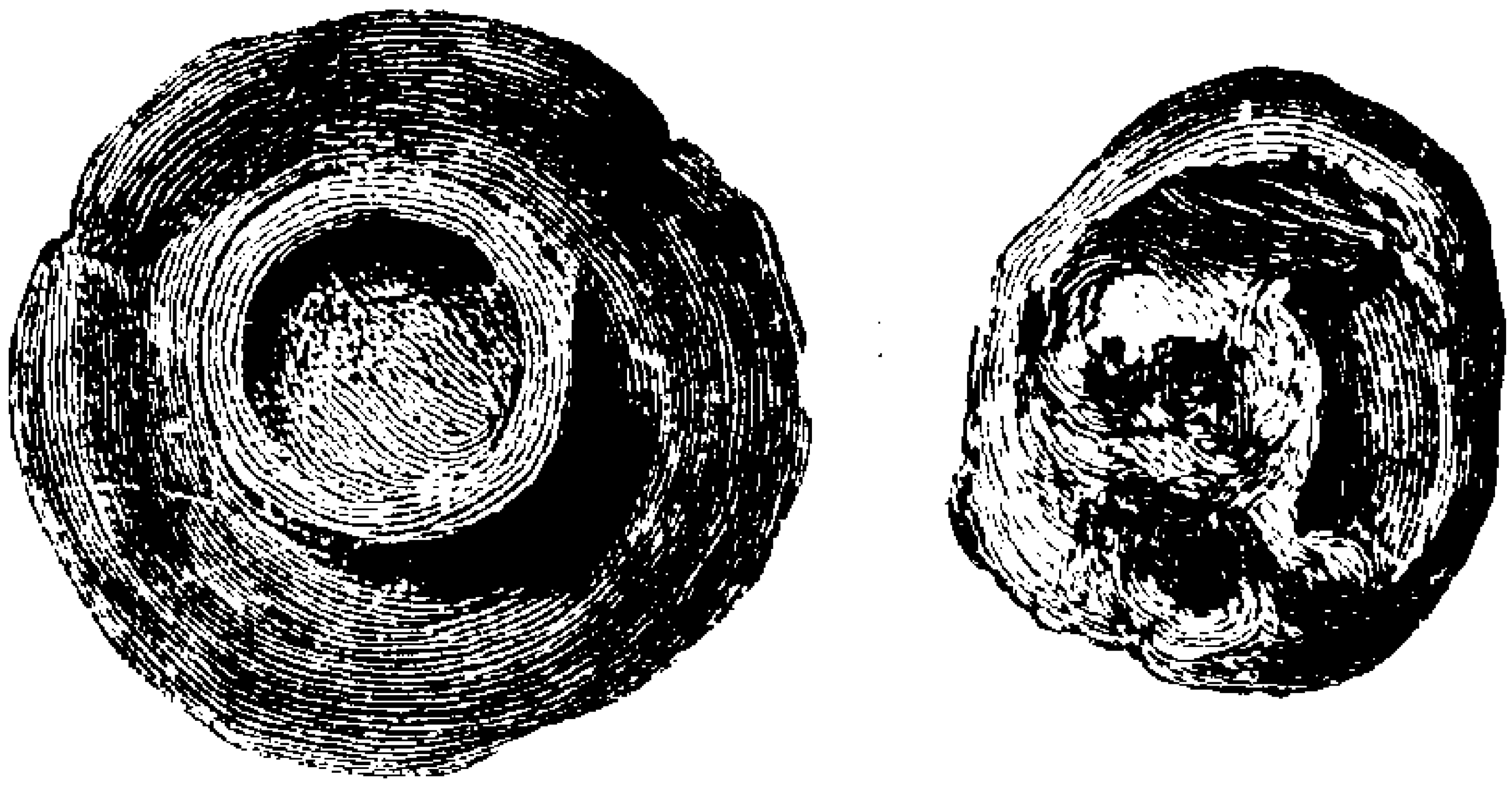
course for use against the latter it is necessary to employ solid hardened bullets.

The weapon used and recommended by Sir Samuel Baker is somewhat heavier than the ordinary ·577, weighing between 11 and 12 lbs.; it was specially made for him, and is sighted up to 400 yards.

For soft-skinned animals, Sir Samuel used solid pure lead bullets, and he always found them deliver the whole power of the charge upon the animal, being generally forced into the shape of a mushroom, and found under the skin upon the opposite side of the beast.

Count Teleki, in his successful three years' expedition in

Central Africa, also used ·577 rifles against elephants, buffaloes and rhinoceros with great effect, although he preferred his 8-bore (shooting 10 drs., and a short conical bullet) for big game, finding that at close quarters a knockdown blow was absolutely necessary. The question of the rival bores for such game as tiger, bear, &c., will probably never be settled, as so much depends upon the capabilities of the shooter, the class of country he is in, and the style of shooting, whether in a howdah or on foot, &c.; but it may be taken generally that for dangerous game it is always as well to be on the safe side and to use as powerful a weapon (in moderation) as you can conveniently handle.



Figs. 13 and 14.—Blocks of soft ·577 bullets cut out of tigers by Sir Samuel Baker

In Africa, where animals of the same species as are met with in India appear to require much more killing than they do in the latter country, the ·577 firing a solid hardened bullet and 6 drs. of powder must always be a most useful weapon. For lion, the largest kind of deer, &c., it is all that is wanted, and even for elephants it is a fairly effective rifle.

For sport in India, when the sportsman is limited to one rifle, a ·500 Express, shooting a charge of 5 drs. of powder and a long bullet, and capable of also firing, when required, the shorter bullet and $4\frac{1}{2}$ drs. for the lighter kinds of game, will probably be found the most useful all-round weapon.

If, in the first instance, the barrels of a ·500 Express are properly constructed for shooting the two kinds of cartridges,

good shooting may be made with both, with the same sighting; and a most useful arrangement this will prove to be, the heavy cartridge being very deadly for all game found in India, with the exception of the pachydermatous animals, while for the deer tribe and for practice the lighter charge is all sufficient. Perhaps the most useful battery on a small scale for India is a ·450 Express for deer, and a 12- or 16-bore Paradox, which does well as a shot-gun, and is also most effective as a rifle.

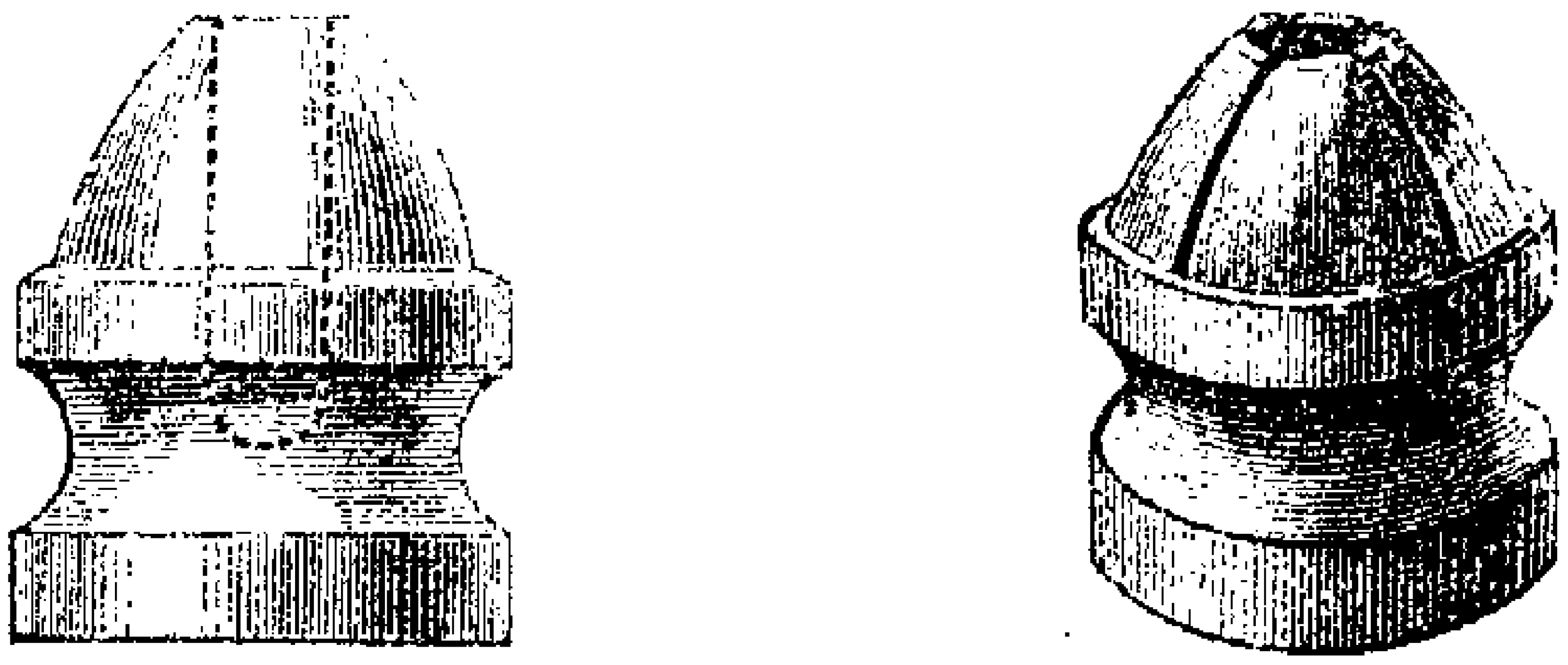
Ball-Guns.—One of the advantages which the ball-gun has over the ordinary rifle is its lightness and handiness compared with the latter, but the serious drawback to its wide use was, in the first place, that it would fire spherical bullets only, and consequently lacked penetration; and, in the second, that it gave but irregular shooting, except at very short ranges. This state of things has been completely reversed by the introduction of the 'Paradox' gun, the invention of Colonel Fosbery, V.C. In the 'Paradox' all the advantages connected with the lightness and handiness of a gun have been retained, while great accuracy when fired as a rifle with a smashing conical bullet has been added.

Since Colonel Fosbery's invention was brought to the notice of sportsmen, the 'Colindian' and other systems of ball-guns have been introduced.

The result has been quite a revolution in the manufacture of weapons for use against game of all kinds, from the larger kind of deer up to elephants.

Take, for example, the 12-bore 'Paradox.' This weapon has all the advantages of quickness and handiness of mounting to the shoulder, so essential in snap-shooting, and yet fires a conical bullet (see fig. 15), hollow or solid, up to a hundred yards or more with the accuracy of a good Express. For all practical purposes, and with all game up to and including tiger or bear, a 'Paradox' weighing from 7 to 7½ lbs. has all the necessary qualities of a 10-lb. rifle, and has, moreover, the handiness of a 12-bore shot-gun, discharging shot quite as well as a good

cylinder or modified choke. The man who uses a 'Paradox' need not take any other gun, a saving in the size of one's battery worthy of consideration; but perhaps the strongest



Hollow point Cross cut

Fig. 15.—12-bore 'Paradox' bullets

argument in favour of this weapon is that the man who has much snap-shooting to do (from a howdah, for instance) is much more likely to be successful when handling the gun

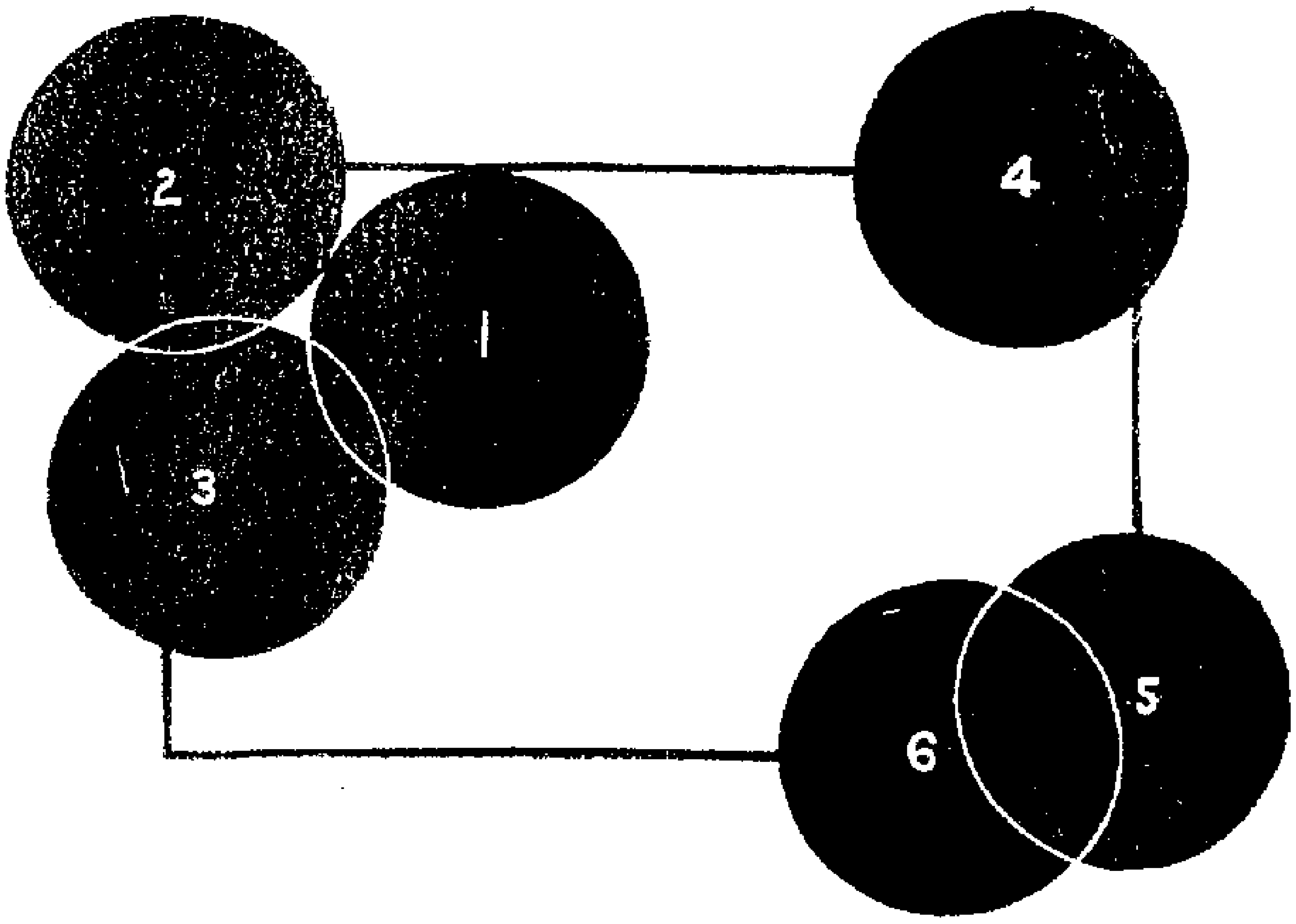


Fig. 16

he uses every day and often than he would be if trying to make snap-shots with an ordinary rifle, used rarely by comparison, and perhaps firing so heavy a charge as to make practice with it 'no joke.'

Colonel Fosbery has succeeded in perfecting the 'Paradox'

system for large bores, such as 10 and 8, and in 1891 one of the latter weapons when tested before the editor of 'The Field,' with the full charge of 10 drs. of powder, and a hardened conical solid bullet at 50 yards range, made the extraordinary diagram in six consecutive shots into a space $1\frac{1}{4}$ in. by $2\frac{1}{2}$ ins. (shown in fig. 16), beating all the records of big rifles at the 'Field' trials.

It should be only a matter of time for weapons made upon this principle to supersede large-bore rifles for big game shooting. Everything is in their favour. An 8-bore 'Paradox' weighs some 2 to 3 lbs. less than an 8-bore rifle, and mounts to the shoulder with the handiness of a gun. The accuracy of the 'Paradox' is greater than that of an 8-bore rifle, the recoil less (as the bullet passes freely up the barrel, instead of having to cut its way through severe rifling, the 'Paradox' being rifled at the muzzle only), and the velocity or striking force is superior.

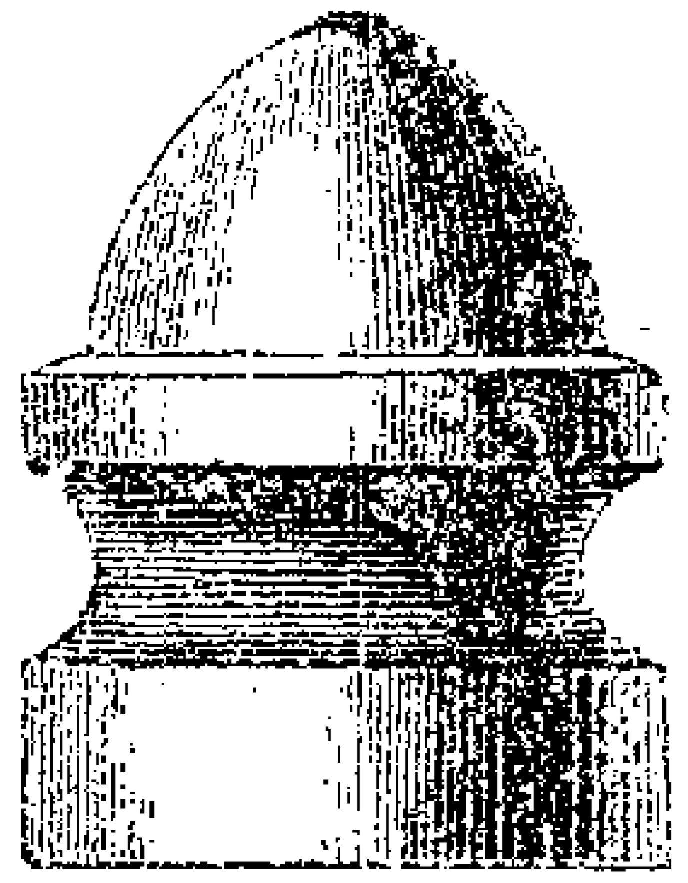


Fig. 17.—Diagram of 8-bore 'Paradox' bullet

Several of these weapons (8- and 10-bores) have already been tried upon elephant, buffalo, &c., in Africa and India, with the most satisfactory results.

Small Bores for Elephant Shooting.—No doubt some sportsmen have been successful in bagging elephants and other big game with ·450-bore rifles, firing a moderate charge of about $3\frac{1}{2}$ drs. of powder and a long solid bullet, such rifles giving great penetration, but no shock to the animal unless a vital part is reached. If the game be found in fairly open country, so that accurate shooting can be made, this weapon may answer in the hands of a good shot; but in most parts, and in grass country, particularly where an animal has frequently to be shot at very close quarters, and where the chances of being able to make a run for it are very much restricted, one would much prefer to rely upon the paralysing blow given by an 8- or 10-bore loaded with a heavy charge of powder and a

conical bullet; in fact, even the admirers of the ·450 warn sportsmen that such rifles are useful under certain conditions only, and this warning is absolutely necessary, several fatal accidents having taken place through sportsmen having misread or not properly appreciated the accounts of the shooting made with these small weapons and the circumstances under which they may judiciously be used.

Systems of Actions for Rifles.—Different kinds of 'actions' are constantly being invented for double-barrelled rifles, but very few, if any, have the sterling qualities of the old double-grip lever, especially when used for rifles shooting heavy charges. No doubt snap-actions of various kinds are made which are sufficiently sound to stand the strain of the charges fired, especially if the 'body' be long and deep, but none of them have the *binding down power* of the grip lever, which is really a kind of screw-grip. Another point in favour of the grip lever is that, should there be a piece of cap or other obstruction between the action and the barrels, the grip lever will have sufficient power to force the action to close and allow the rifle to be fired; and the same thing applies when a very tight cartridge, or one with somewhat too thick a rim, requires to be forced home. Now, under the same circumstances, a rifle with a snap action could not be closed at all, or, at all events, only with great difficulty and with unusual force, because all spring bolt systems require that the barrels should close up freely upon the action before the bolt can move into its proper position for fastening down the barrel.

For small bores such as are used for deer stalking, &c., the hammerless system has some advantages; but there are objections to these actions for weapons intended for foreign sport, and these objections apply more particularly when big game rifles are in question. Most sportsmen are fairly well acquainted with the construction of the ordinary hammer gun fitted with rebounding locks, but very few know anything of the internal arrangements of the hammerless system, and there is no doubt that the internal arrangements of the latter are more likely

to get out of order when subjected to the wear and tear and the rough usage of a shooting expedition than those of the former, to say nothing of their being more easily affected by sand, rust, &c. They are also less readily taken to pieces and cleaned.

Too much care cannot be given to the selection of a battery, the minutest details of the weapons, and the ammunition for them, and yet it is a curious fact that sportsmen frequently spend much time and money over their general outfit, and take but little heed about their weapons, upon which their sport, and possibly their lives, may depend.

In ordering a battery, choose the best rifles you can afford to pay for. The first expense is likely to appear heavy to those who can see little difference between the expensive rifle of a high-class maker and those supplied of a cheaper kind, but very little experience will be needed to prove that the best is the cheapest in the end.

Few sportsmen know the amount of money, care, and skill that has to be spent upon a double rifle which is the best of its kind and a really accurate weapon; that is to say, a double rifle which has its barrels so perfectly adjusted that even a skilled shot cannot tell the shooting of one barrel from that of the other. Great care has to be taken in the manufacture of all the parts, for the failure of a striker or a spring may mean serious or even fatal results to the shooter when after dangerous game; and this work has to be paid for.

The workmen employed on best rifle work are skilled men, and can always command high wages. In some of the cheaper kinds of double-barrelled rifles one barrel frequently shoots some inches away from the other, rendering it impossible for the sportsman to make good practice even at a target, much less at game.

Great strides in the accuracy and adjustment of double rifles have been made during the last ten years. It is impossible here to say exactly what diagrams one should be fairly entitled to expect, so much depends upon the type of rifle

required; but perhaps as good a guide as any is to take the diagrams made by the winning rifles at the trials of sporting rifles before the editor of the 'Field.' For an ordinary Express it may be accepted that a double ·450 firing ten shots, right and left barrel alternately, making a 4-inch group, viz. all the ten shots in a 4-inch square, is a very fine shooting weapon, and that one putting all its ten shots into a 6-inch at a hundred yards is quite up to the average.

Do not depend upon diagrams shown as the record of the shooting of a rifle. The only satisfactory plan is to go to the maker's grounds and see the rifle fired, to fire it yourself, or, if that is not convenient, get a competent friend to go and see the diagrams made. Then, again, it is very desirable to have the sights cut to suit your own style of shooting, for it is not at all unusual for two good marksmen firing the same rifle to make a considerable difference in elevation on the target at, say, 100 yards range.

Recoil Heelplate.—It is not a bad plan to have recoil heelplates fitted to all rifles from ·450 to 4 bores. They save the shoulder very much when firing large charges. See that the rubber is properly smoothed and varnished, so as to get rid of the clinging feeling these heelplates otherwise have.

Spare Weapons.—In going for any length of time upon a sporting expedition, it is always well to have reserve rifles which should be as nearly as possible duplicates of those in the regular battery in weight, mount, sighting, &c., so that no difference is noticed by the sportsman should he have to fall back upon his reserve. You may never want them, but if, when you are in the game district, hundreds of miles up country, you smash or injure the rifle you are depending upon, you will then fully appreciate the advantage of having a reserve. It is a very easy thing to break the stock of or otherwise damage a rifle, or it may even be lost, and if you have no others to fall back upon the sporting trip must be spoiled, or at any rate seriously hampered.

A fair battery for an expedition to Africa would be a

pair of 8- or 10-bore rifles or 'Paradox' guns, shooting 8 to 10 drs. of powder; a pair of ·500 bore, 5 drs. solid ball rifles, one ·577 and a 12-bore shot or 'Paradox' gun. Also a ·400 or a ·450 single-rifle sighted up to 500 yards would be found very useful in many parts.

Spare limbs should always be taken, viz. extra hammers, mainsprings, tumbler pins, and foresights, and lessons should be taken from an experienced gunmaker in taking weapons to pieces and putting them together again properly. Turnscrews, such as working gunmakers use, should be specially ordered, and not the slight and nearly useless tools usually found in rifle and gun cases. These are made by the gross, and are generally well-nigh worthless. Do not fail to have a very powerful screw-driver to take out the breech-pin, which is always very firmly screwed up.

With large bores and all rifles that have very much recoil insist upon having the front trigger thick and well rounded, to prevent its cutting the forefinger when firing the left barrel. It is a very good plan to have the front trigger hinged or hung quite loose, so as to give way to the finger. Also see that the left trigger pulls at least 6 lbs., to prevent both barrels being fired together. There is no objection to having both locks of such weapons made with a fairly heavy pull off; the fact being that when a rifle weighing 12 or 13 lbs. is being handled a 6 or 7 lb. pull does not feel heavier than a 4 lb. pull does in an ordinary shot gun. See that all your rifle stocks are made of tough strong wood, and that the grasp or handle is left sufficiently thick to give a good hold to the right hand. It is also a very good plan to have the hand of the stock strengthened by having the strap of the action made so as to extend its full length and come over the comb. This plan was first suggested by Sir Samuel Baker, and there can be no doubt but that it very considerably strengthens the stock in its weakest part.

Try your cartridges in the chambers of your rifle or gun before starting for the day's shooting, and carefully discard all that will not go into the weapon freely and allow the action to

be closed with ease. It is desirable to have cartridge-correctors made the exact size of the chambers of each weapon.

Rebounding Locks.—Many sportsmen think that when the hammer is at the rebound or half-cock it is in a safe position, but sometimes it is quite the reverse. This is because some rifles and shot-guns are made with the face of the hammers too close to the end of the strikers; when this is so, it will be found that, should the hammer be pulled up nearly to full cock and then let down again (without touching the trigger), there is sufficient 'give,' or 'spring,' in the parts of the lock to allow the hammer to just reach and to 'flick' the striker hard enough to fire the rifle. The danger of this defect must be obvious. The face of the hammer when pushed forward as

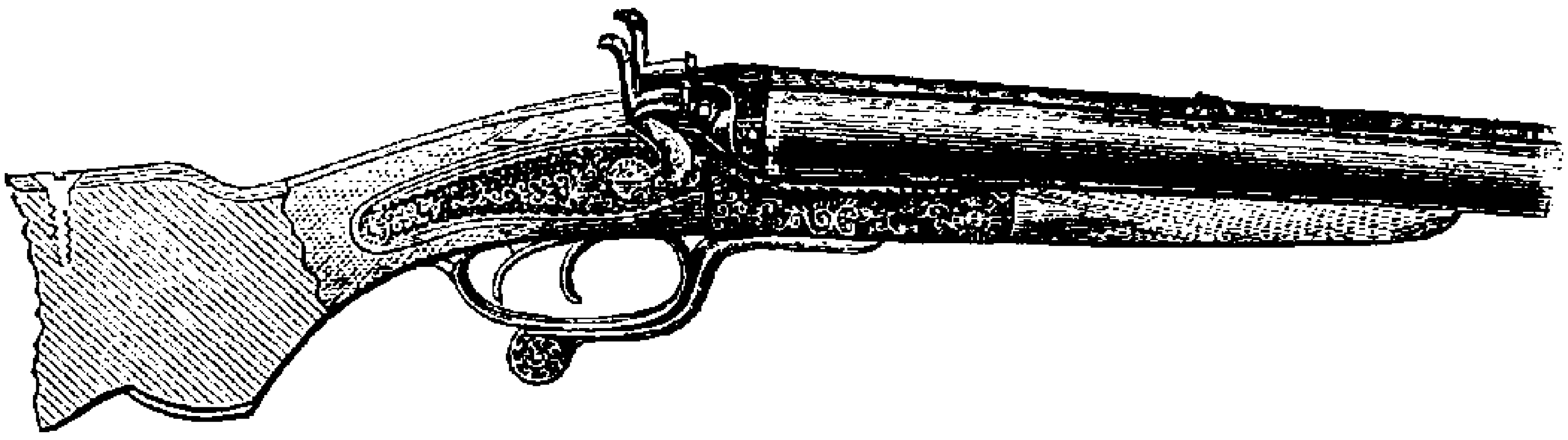


Fig. 18.—Illustration of adaptation to Sir Samuel Baker's ·577 rifle

far as it will go (without the trigger being pulled) should be well away from the end of the striker. If there is any doubt as to whether there is sufficient space or not, hold a flat piece of metal or card against the face of the action, lift the hammers nearly to full-cock, and then release them; if the metal or card be marked by the end of the striker, it is evidence that the space between the hammer and striker is not sufficient. This should not be done often, as it has a tendency to injure the end of the scear of the lock.

Stocks, Loops, Stops, Cases.—In ordinary rifles do not have the stocks made the same shape as in your guns. Most sportsmen miss birds by shooting under them, but with a rifle more game is missed by being shot over. It is desirable to have the stocks of rifles made a quarter of an inch more bent than those

of guns, and in heavy bores even half an inch extra will be found an advantage in shooting, to say nothing of saving the shooter's face from being punished by the recoil. Also remember that as you increase the weight of your rifle you must decrease the length of your stock.

When loops are attached to rifles for the purpose of enabling you to use slings, it is desirable to have flat ones, thus—

Fig. 19

and not rings or swivels, which always rattle, and may disturb game. The above form has the further advantage of being stronger than the others. Always refuse to allow the gun-maker to fit stops to the hammers of any weapons intended for use against dangerous game. You may at a critical moment forget that the locks are bolted, or the bolts may have got loose and may have slipped into the hammers without your knowledge.

For rough shooting, especially in damp climates, have your rifles constructed for solid brass cases, or those covered with a thin coating of brass. These are less likely to stick in the chambers, and are not so easily damaged as the paper ones. Have your cartridges done up in small tins, hermetically sealed, packing a few of each kind you are likely to use in a separate tin, say fifty in each package. In this way you will be able to keep the bulk of your ammunition weather-proof. The contents of each tin should be stamped on the outside.

It is a useful plan to have loose-fitting flannel bags made for the barrels and stock of each weapon.

Perhaps the most convenient form of rifle case is 'The Shikari':

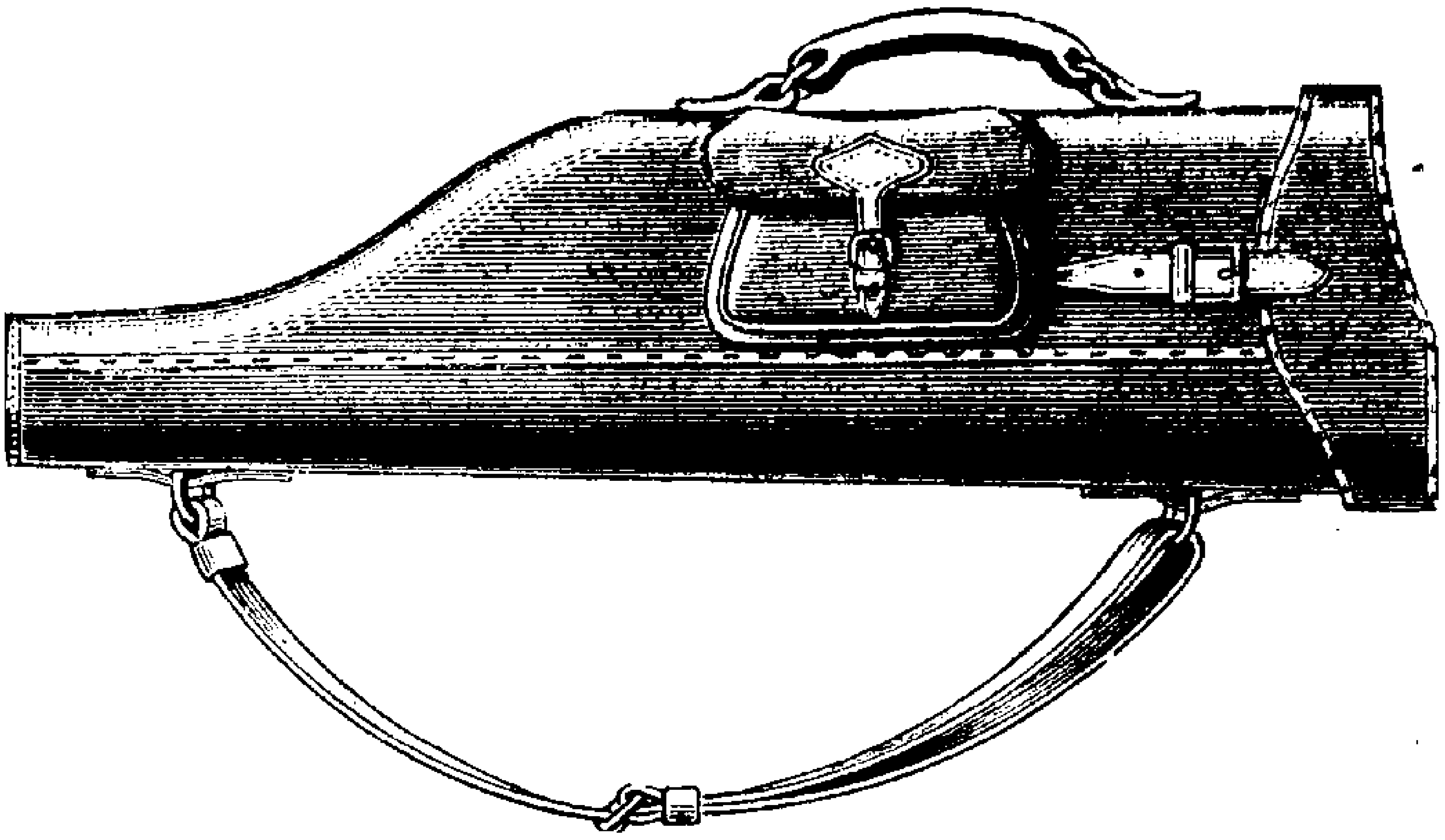


Fig. 20.—'The Shikari' rifle case

See that your case is made of strong sole leather, so as to be fairly rigid and capable of resisting pressure; for real rough work there is nothing better than oak covered with leather.

Rifle Sights.—No absolute rule can be laid down as to the best form of sights for sporting purposes. Generally speaking, the wider and the shallower the V in the backsight the better for snap-shooting, but beyond a certain point this shape makes it difficult to ensure taking the centre of the sight. The silver line or the ivory pyramid with which the standard is frequently inlaid very much assists in getting the centre quickly.

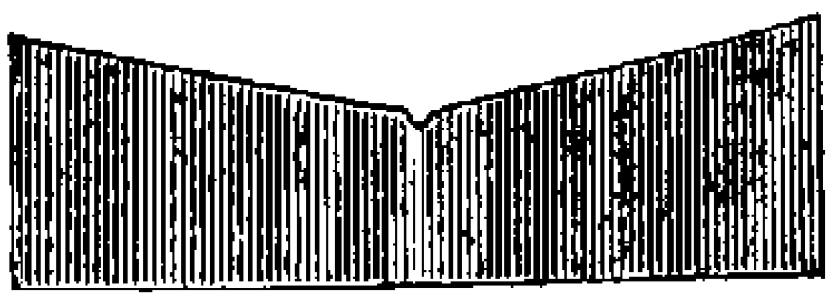


Fig. 21.

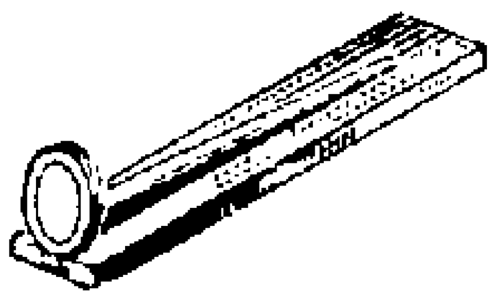


Fig. 22.

A very good form of backsight is a modification of the style frequently used in German rifles, viz. a wide shallow V having a small rounded nick and a fine line down the centre (see fig. 21).

A sloping standard has the advantage of showing up the silver line, but in a bright light this has a tendency to 'blurr' and prevent a fine bead being taken. It is as well under these circumstances to black the standard, and upon occasions the foresight; this may be done very simply by smoking them with a wax match. Foresights should be let in from the front and fixed with a small screw, so that they can easily be removed and a different form of sight inserted when required.

A spare iron foresight and two or three ivory ones should be fitted to each rifle.

A very useful and convenient form of night sight is an ordinary iron one having at the rear end a small disc covered with white enamel or luminous paint (see fig. 22), and so arranged that this disc can, when required, be raised in front of the ordinary bead. If properly constructed and placed at the correct angle, it can be seen well when the ordinary sight would be quite invisible.

Telescope sights are now made with elevating screws, which enable the necessary elevations to be quickly obtained. For stalking and deliberate shots the telescope is most useful, but it is necessary to have the eye-piece fitted on a spring slide and made sufficiently large to prevent injury to the shooter's eye in case of the recoil being heavy; but these sights for rifles firing heavy charges cannot be recommended.

Many sportsmen complain that with Express rifles (in particular), and not infrequently with other rifles, they shoot over their game at short ranges, an error which they attribute to the 'high sighting' of their rifles. Sometimes this explanation of their shooting over their game is the correct one; but frequently the error is caused by the shooter, when firing a snap-shot at an animal moving across him at a short range, taking a very full foresight, not having sufficient time to get his eye down to the level of the backsight, and draw as fine a bead as he would have done had he taken a deliberate shot.

But no doubt some rifles are 'over-sighted,' and if so it is partly the fault of the gunmakers and partly the fault of the

sportsmen themselves, who insist upon gunmakers trying for the impossible. It is not an uncommon thing to hear a sportsman say, 'Oh, my rifle has a flat trajectory up to 200 yards,' the truth being that the rifle in question has been sighted to shoot correctly at 200 yards, but the bullet at the highest point in its trajectory (i.e. at about 110 yards from the muzzle) will probably have risen from four to eight inches (according to the velocity of the bullet) above the line of aim.

It is best to have an Express rifle made with the first leaf or 'standard' sighted for not over 150 yards, and if this is properly done, no misses from over-sighting need be made between thirty and 150 yards.

Again, it is within the experience of most rifle-shots that it is exceedingly difficult to make good shooting when firing at game very much below the shooter (ibex down hill for instance). This difficulty is often accounted for by a theory that in shots of this kind the bullet is less acted upon by the forces of gravity than in ordinary horizontal shots; but in reality the difference in the fall of the bullet at 150 yards in down-hill shots at an angle of 45 degrees and in horizontal shots at the same range is very slight.

Still sportsmen find in practice that they have to aim three to six inches below the part which they wish to hit, to ensure success in these down-hill shots.

In this case the cause of errors in elevation is the great difficulty there is in getting the head down to the stock so as to properly align the foresight with the bottom of the notch or V of the backsight.

The sportsman can easily test this theory for himself by putting any ordinary rifle to his shoulder in a room, aiming first at some object considerably above his head, and then at some point or object upon the floor. Anyone who does this will find that in shooting at the object above him it is easy enough to align the sights upon it, that by bending the neck and lowering the head the sights can be accurately aligned upon any object on a level with the shoulder, but that there is very considerable dif-

ficulty in getting the eye down to properly align the sights when the object aimed at is upon the floor. In fact, if the stock of the rifle is fairly straight it cannot be done. Both these cases of over-shooting come from the same cause; in the first 'hurry' has induced the shooter to forget to set his head down properly on to the stock, in the second his own build and his rifle's make it very hard for him to do so. The same principle is illustrated in rabbit shooting with a fowling-piece at short ranges. Unless using a gun with a good bend to the stock it is difficult to get down low enough to your rabbit crossing at say fifteen yards, so that a dozen are missed by shooting over for one that is missed by shooting under at that range.

It is as well, too, to remember that in shooting from a 'rest' there is always an inclination on the part of the barrels to fly upwards, and this is particularly so where the 'rest' is of any hard substance, a rock or a log for instance. To counteract this tendency to fly upwards, grip your rifle firmly with your left hand, and put a pad of some soft material (say, your cap) between your rifle and your rest.

Assuming that any rifle-shot knows the danger of *pulling* as opposed to *pressing* the trigger, that he will be careful to see that his foresight neither gets bent nor shifted, that he does not get buck fever, and can judge distance with approximate accuracy, there seems to be only one other hint worth giving, and that only to those who find a difficulty in seeing the backsight clearly; those, that is, to whom it appears blurred and misty.

These sportsmen should have their rifles arranged with the backsight not less than seven or nine inches from the breech, since the further off from the eye it is, the more clearly defined it becomes; but of course there is a limit to the distance at which the backsight can be put from the eye, since the closer the backsight is to the foresight the greater the angle of error.

It is sometimes even desirable to have the barrels made of extra length to allow of the backsight being put further from the breech end, but long barrels are unhandy on horseback and in thick timber.

NOTE.—It may be added that these notes have been submitted for criticism and comment to experienced practical sportsmen, including Mr. F. C. Selous, Col. James Baker, and Mr. Edward Ross.

Mr. Selous wrote, 'As far as my experience goes, I agree with what he says.'

Col. James Baker stated that, after perusing the chapter with his friend Mr. Edward Ross, they both of them fully concurred in the views expressed, and had nothing to alter or to add.—C. P.-W.

CHAPTER XV

HINTS ON TAXIDERMY, ETC

By Clive Phillipps-Wolley

That 'the reward lies not in the prize but in the race we run' is probably more true of sport than of any other pursuit, and yet even in big game shooting there are prizes to strive after which serve at any rate to remind the winners of the races they ran to obtain them. To the man who has won them fairly, the mighty antlers and fierce masks which hang in his hall or study are treasures beyond price. As to the men who *buy* such trophies, they are not of our guild, nor is it easy to comprehend them or their motives.

When the light is waning and the flames from a wood fire cover the walls of a hunter's den with quaint shadows of the *spolia opima* of the chase, it is easy to explain to a kindred spirit the value set upon these hardly-earned treasures. To some they may be mere dry bones or hideous mummies; but out of them and their shadows the tired man, dozing by his hearth, can call up pictures from the deep primeval forest, the sheer snow mountains, or sweet and wild wind-swept upland; pictures such as no artist ever painted or poet fancied. Each head is to that dreamer a key to some locker in his memory. He has but to look at those antlers in the firelight, and the past comes back vivid and glorious, aglow with the colours of an Indian summer, or bright with the blossoms of an Alpine spring, mellow with the beauty distance lends, and painted by the strong happy hand of youth.

If age and feebleness come, shall there be no satisfaction to the old hunter in remembering the ibex he outclimbed, the stag whose senses were not keen enough to detect the stealthy

When the light wanes

approach of those now clumsy feet tottering to their rest; the grim foe, tiger or grizzly, upon whom his worn-out eyes once gazed without blenching, measuring the shot calmly, upon the success of which hung *his* life or the beast's?

More than all the pleasures which the rich man feels as he surveys his Murillos or his Raphaels are the hunter's, as his eyes wander over his antlered walls. *He* shot the beasts whose spoils are round him, and in the doing of it scenes were graven on his memory which can never be effaced; mental and physical qualities which, but for these silent witnesses, Age the doubter would persuade him that he never possessed, were tried and not found wanting.

But what can *bought* heads be to the buyer? Furniture for his rooms perhaps, and, even so, misleading; for if a house is to be worth anything, it should represent the tastes and life of the man who lives in it. As a rule, it is long odds that the owners of bought trophies cannot so much as remember the shape of the beasts whose horns they hang up, much less have they any associations connected with them. At the best, they are but costly rubbish; unfortunately they are worse than that. The demand for antlers and sheep's horns insures a supply being secured in some way, and so it happens that in Canada to-day every up-country trader has been supplied with a printed list of the prices which will be paid for trophies, according to the number of inches they measure round the base or the length and span of the antlers.

In one trader's house which I know there are nearly a hundred magnificent sheep's heads waiting for a purchaser, most of which have been brought in by Stony Indians, whom no law can touch for shooting in season or out of season.

The damage done by this head-hunting is twofold: first, to the sportsman, whom it will eventually deprive of his game; secondly, to the country, as tending to rob it of the attractions which it possesses for a class which brings a great deal of money into it. A fair sheep's head may be bought for twenty-five dollars, but many a hundred pounds of good English money has before now been distributed amongst the natives and traders of British Columbia in the attempt to obtain such a head by fair shooting. No doubt efforts have been made by the legislature to protect the game; but in those countries to which I have

had access I have found that, though the laws were good enough, they were rendered useless through lack of men to enforce them.

In Canada no game laws can ever be of much avail as long as the Indian is allowed the privileges which he at present enjoys.

But the principal business of this chapter is to instruct the hunter in the best methods of preserving his trophies when fairly won, until such time as he can hand them over to one of our excellent practical taxidermists at home. In nine cases out of ten, the head is all that a man cares to preserve, and those who are wise will not cumber their houses with too many even of these *with the masks on.* In spite of infinite pains, moth and dust will corrupt the most carefully guarded collections. However, if you want to mount the head with skin and all complete, let your first care be to sketch or photograph it in profile before the skinner's knife has touched it, in order that the man who sets up the trophy may have some idea of what it looked like in life.

If the hunter cannot sketch decently, a kodak is a good substitute for the pencil, or the proportions and various bumps and inequalities in the outline may be accurately preserved by laying the head upon a sheet of paper and tracing its outline with a simple instrument, consisting of two pieces of metal four or five inches in length, set at right angles to one another, with a socket at the angle into which a lead pencil is fixed, so that the point projects just far enough to make a mark upon the paper, when, with the lower side upon the paper and the upright side against the head, an outline of the profile is taken. Outlines or photographs should be made as soon after death as possible, before the muscles have time to sink and lose their natural prominence.

In skinning a horned head proceed as follows:—

Slit the back of the neck up the middle to a point between the horns, then make a crosscut from the base of one antler to the base of the other. This will give you a cut shaped thus, T. Now separate the skin from the skull round the base of each

antler, and be careful not to cut the coat unnecessarily during the operation. Next turn the head over and begin at the other end, severing the inner side of the lips from the gums as high up as you can reach, and skinning the muzzle as far back as you can. Then peel off the whole mask from the antlers downwards to the muzzle, being specially careful not to slit the skin, either at the eyes or at the nostrils, which are the tenderest portions of it. Be careful to preserve a sufficiently long neck, and do not let your Indian or Tartar cut the beast's throat (as he will do if you do not watch him), as nothing looks worse than a taxidermist's stitches showing under the throat of a trophy.

If you have followed these directions, you will have preserved so far the entire lips of the animal. Now take your knife and slit the lips, separating the inner from the outer skin, and dress the cut so made thoroughly well with powdered alum. Having removed the skin from the skull, you may clean this part of the trophy, either by boiling it if you have a pot with you large enough for that operation, or if not, after whittling out the eyes, brains, and any flesh you can readily detach, you may hang it up in a tree out of reach of coyotes to dry, until fit for packing. Before putting your skins and skulls apart to dry, mark them carefully with corresponding numbers, to prevent mistakes later on.

Should you wish, however, to skin a beast whole for mounting in some museum or elsewhere, you must proceed as directed by my friend, Mr. John Fannin, curator of the Museum of British Columbia, whose directions I have slightly altered to suit my purpose, and inserted below.

Turn the beast on to his back and make cut 1, from the point of the breastbone along the centre of the belly to the root of the tail, taking care only to cut through the skin, and not into the intestines. A few pieces of fine brush, laid on the inside of the skin as you peel it off, serve to protect the skin from any blood which may escape from the bullet wounds or elsewhere during the operation of skinning.

Next, make a cut from the hoof of each foreleg to the upper

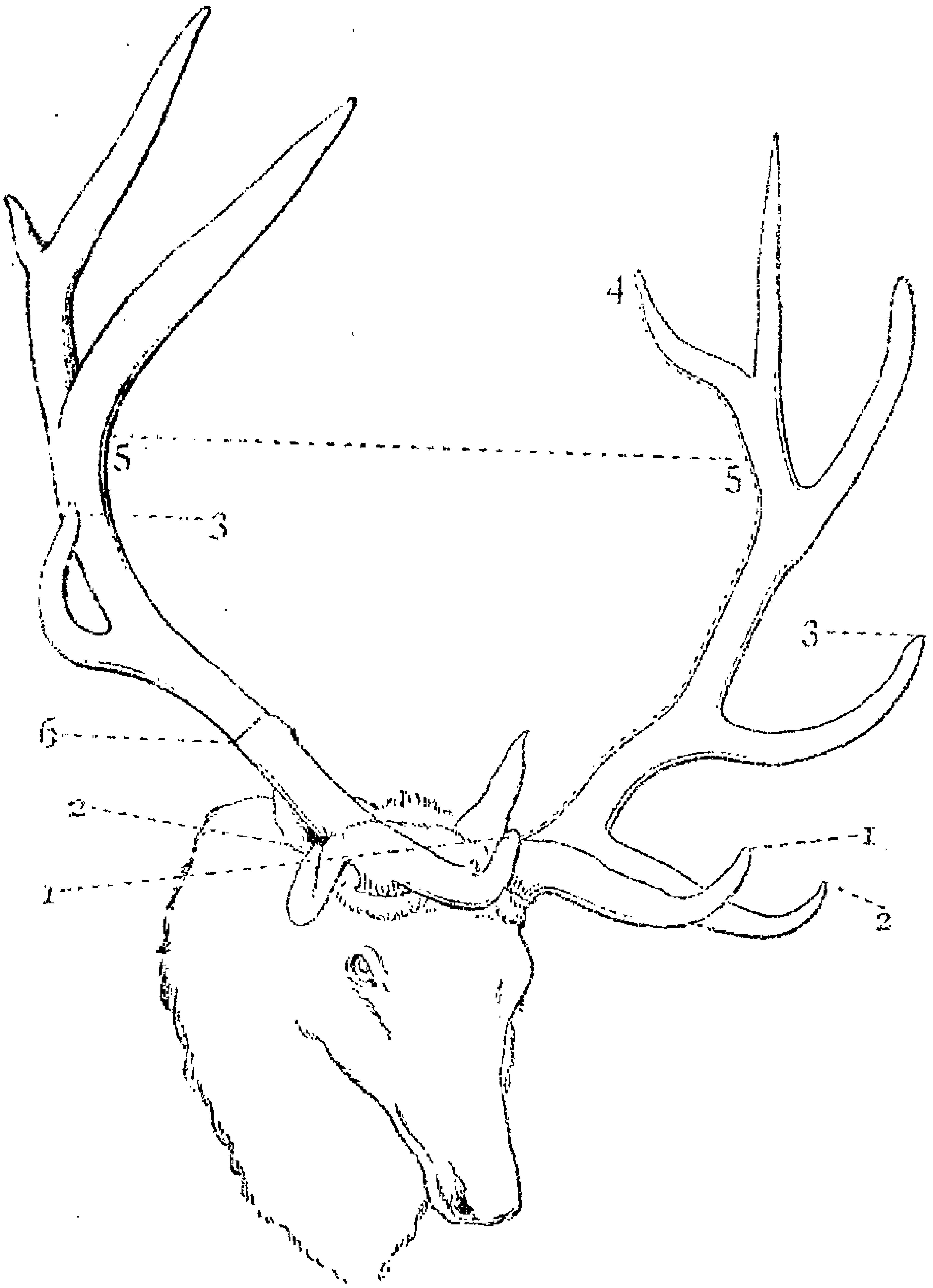
end of cut 1, making the incision down the *hind* part of each foreleg. Make a cut from the hoof of each hind leg, along the hinder part of it to the lower end of cut 1. Now skin round the legs; sever the leg bones at the knee and hock joints, leaving these bones with the hoofs attached to the skin, but with the skin freed down to the hoofs. Now skin the animal in the ordinary manner, using the edge and not the point of your knife, and on reaching the neck make the T shaped cut described above, along the top of the neck and between the antlers. This will allow the skin to be removed entirely from the head; but before proceeding with the head the skin should be removed from the body as far as the head, and the head severed at the neck joint.

Having washed any blood off the hair and detached every fragment of meat or fat which you can get off the skin, stretch it out upon the ground in some airy spot where it can dry naturally, unaffected by sun or fire. Dress the skin with powdered alum, or failing that with wood ashes, and don't peg it out. When prepared in a solution of soda by the taxidermist at home, the alum-dried skin will become as pliable as kid and will resume its natural proportions, and these should satisfy any honest hunter.

The methods recommended in this chapter are of course only for preserving trophies in the field. All trophies should be sent home for final preparation as soon as possible, either prepared with alum and packed dry, or in a tub of pickle composed of alum and salt in the proportion of two-thirds of the former to one-third of the latter.

Some men make a practice of carrying a saw with them to divide antlers and skulls for greater convenience in packing, sawing the skull right through from crest to nose; but though trophies are undoubtedly somewhat easier to pack in this way, I do not recommend it, as a very heavy wapiti head of mine so treated is constantly annoying me now by breaking away from the rivets which should hold it, to come thundering upon the ground.

In sending skins home from temperate regions I have never found it necessary to use any preservative against insects other than the powdered alum with which the skins are



Wapiti head

1, 2, and 3 indicate the brow, bay, and tray antlers respectively: 4, indicates the line along which a head should be measured for length; 5, the line along which to measure for span; 6, where to measure for girth.

dressed; but in hot climates more elaborate precautions are necessary, and a liberal dose of spirits of turpentine should be applied externally from time to time.

An application of spirits of turpentine put on with a liberal hand, and brushed in, the way of the hair, with a dandy brush at spring-time, will go a long way towards saving trophies from the ravages of moth.

A covering of fine glazed gauze, made like a nosebag, is useful as a protection to heads left stored in an unused room.

Here it may be convenient to set out the ordinary systems of measuring game trophies amongst English sportsmen.

Skins are measured from the snout to the tip of the tail, and from side to side under the forearms.

There is a system of measuring bear skins upon the American continent which may have given rise to some errors —to wit, measuring from the '*heel* to the snout.'

In measuring the heads of sheep, ibex, and such like, the chief points are the girth of the horns at the base, and the length of each of them from base to point measured along the outside edge of the curve.

In measuring stags' heads the points to note are: (1) the number of points or tines, (2) the length of the horn measured from the skull along the outside curve of the beam to the tip of the longest tine, (3) the greatest width between the horns, and (4) the circumference of the beam between the bay and the tray points. The diagram on p. 419 illustrates these measurements, indicates the points named, and displays the normal growth of tines in a wapiti head.

A SHORT
BIBLIOGRAPHY OF BIG GAME SHOOTING, ETC.

Since it seems impossible that any one man should have a thoroughly comprehensive knowledge of all forms of sport in any given district, it has been thought well to give here a short list of the best books known to the present writer upon most of the topics dealt with in these pages, in order that those specially interested may see at a glance where to turn for further information. There are, of course, a vast number of books written upon sport in different parts of the globe; but it is hoped that those quoted below will be found to cover most of the ground. Where opinions vary it is left to the reader to compare evidence, and judge for himself.

This seems an appropriate opportunity for acknowledging, in as brief a space as possible, but as heartily as can be conveyed by written words, the indebtedness of those employed upon these volumes for the invaluable assistance rendered by a host of friends too numerous for special mention, for information given, and photographs sent. It is hoped that the use made of their contributions will be a sufficient reward for the trouble they have taken.

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[1] This admirable volume contains much information upon other beasts besides the Sardinian moufflon, little known and not treated of elsewhere, e.g. *Capra ægagrus, Ovis tragelaphus* (the Barbary sheep) and the red deer of Asia Minor.

(BLANK PAGE-NO CONTENTS)

INDEX

TO

THE SECOND VOLUME

'A' TENT, the, 395
Abyssinia, 325
Adam zad (sloth bear), 186
Afghan Boundary Commission, 321
Afghanistan, 312, 315, 321
Air cushions, 386
Akershus, Norway, 125
Alaghir, Caucasus, 49
Albania, 77
Aleknanda river, India, 325
Alexander II. of Russia, 168
Alichur Pamir, 374
Allahabad, 226
Allia (elephant), 228
Almanzor, Spain, 179
Alpenstocks, 29, 57
Alpine stag. *See* Red deer
Alpine tent, Whymper's, 385
Altai, the, 73, 74, 75, 291
Altyn-Tagh, the, 299
American stag, the Great, 36
Ammunition. *See* Rifles
Amsterdam Island, Spitzbergen, 19
Anar (native fireworks), 189
Anay (elephant), 228
Andalusia, 177–179
Andorra, 179
Antelope, Caucasian (Antilope saiga), 44, 45
Antelope, Indian (Antilope Bezoartica), 345; native methods of hunting, 347; stalking, 349; pugnacity of the bucks, 352; measurements, 357
Antelope, Mongolian (Antilope subgutturosa), 74
Antelope, Saiga (Saiga tartarica), characteristics, 340; measurements, 343
Antelope, Thibetan (Pantholops Hodgsonii), 335; characteristics, 339; measurements, 343
Antlers and horns, traffic in, 415
Ants, red, danger of, in tiger shooting, 214
Aoula (Phyllanthus emblica), 354
Aparejo, the Mexican, 381, 382
Arakan, 234, 334
Aranjuez, 176
Ararat, 52
Araxes, the, 44
Arco, Count, 81, 116
Arcot rogue elephant, the, 233
Arctic regions, sport in the, 11; walrus hunting, 3–15; bear hunting, 15–21
Arkar (female poli), 367
Arná (Arni), buffalo, 253

Arundo phragmites (Caucasian reed), 31
Asia Minor, 228, 321
'Asian,' the, quoted. *See* Measurements
Assam, game in, 221, 228, 233, 234, 240, 248, 253, 254, 258, 262, 265, 267
Astor, game in, 277, 302, 303, 311, 312, 313, 315, 368
Asturias, the, 175–178
Attock, 315
Augustus, Elector, 116
Aurochs (Bos bonasus), Caucasian, 65; former range of, 65; hunting, 66–71; measurements, 70; description, 72; in Biolvitskia forest, habits, 167; measurements, 167; a typical drive, 170–172
Austria, Emperor of, 85, 98
Austria, the late Crown Prince of, 116
Austria, Upper, 78; red deer in, 112, 117
Authorities for measurements of game. *See* Measurements

BAIKAL, Sea of, 291
Baillie-Grohman, W. A., on the chamois, 77–111; on the Alpine stag, 112–122
Baker, Colonel James, on the battery, 412
Baker, Sir Samuel W., on lions, cheetahs and tigers, 211; on African elephants, 233; his choice of rifles and bullets, 397, 398, 406
Baksan, the, Caucasus, 41
Baku, 45
Baldwin, Captain, on a tiger's method of killing, 211
Balkar pastures, Caucasus, 42
Balkaria, 42
Ball-guns, 399–401
Balsam boughs, for camp bedding, 386
Baltistan, 299
Ban bakri (gooral), 329
Ban Bhains (buffalo), 253
Banteng (Burmese wild ox), 248
Baral (Barul), burrel, 299
Barasingh (Cashmerian deer), 36, 374; sambur, 257; swamp deer, 265
Barhamputra, 265
Barking (rib-faced) deer. *See* Deer
Barse (Caucasian lynx), the, 42, 43
Battery, for arctic sporting, 3; for wild boar, 35; for red deer, 119; for elk, 152; for bears, 160; rifles and their ammunition, 394; the Express, and bullets suited for, 394–399; ball-guns, 399; the Paradox, 399–401; small-bores for elephant shooting, 401; systems of actions for rifles, 402–404; selection of battery, 403; the recoil heelplate, 404; spare weapons, 404; spare limbs, 405; turnscrews, 405; triggers and stocks, 405, 406; cartridges, 405; rebounding locks, 406; loops for slings, 407; stops to hammers, 407; brass cases, 407; tins for cartridges, 407; the 'Shikari' rifle case, 408; rifle sights, 408–412
Bavaria, King of, 94
Bavarian Highlands, chamois shooting in, 78; attitude of poachers and keepers, 80; shooting season, 80; size of stags in, 117
Bavarian keepers, 80, 94, 97
Bear, brown, Caucasian, 40; his haunts, 40; characteristics, 41; Norwegian, 155; Russian, 154; food, 154; size, 154; tenacity of life, 154; methods of hunting, 155; sporting incidents with, 156–160
Bears, Indian — Beluchistan (Ursus gedrosianus), 193; black, Himalayan (Ursus torquatus), 186; habitat, 186;

method of shooting, 187; measurements, 194; Burmese (Ursus malayanus), 193; measurements, 194; piebald (Ailuropus melanoleucos, 194; measurements 194; sloth (Ursus labiatus), 186; habitat, 188; method of hunting, 189; measurements, 194; snow (Ursus Isabellinus), 186; habitat, 186; method of hunting, 188; measurements, 194
Bear, Polar. *See* Polar bear
Bears, Russian, driving, 161; arranging for a hunt, 161; cost of same, 162; 'ringing,' 162; a typical drive, 164–167
Bears, Spanish, 176; hereditary hunting, 177
Bedding, hemlock, 386
Bees, danger of, in tiger shooting, 214
Bells for pack-horses, 380
Belts for cartridges, 387
Beluchistan, 193, 304, 315, 321, 362
Beluchistan bear. *See* Bears, Indian
Bena (musk deer), 283
Bengal, 213
Bezoar stone, 109
Bhalu (sloth bear), 186
Bheria (Indian wolf), 225
Bhootan, 240, 265, 325
Bibliography of big game shooting, 421
Biddulph, Major, 342
Bielaia river, Caucasus, 38
Bielowicza (Biolvitskia), Lithuania, 38, 39, 65, 167, 168
Bikanir Desert, 345, 346, 355, 362
Bind-hund (leash hound), the, 135, 144
Bir Shumshir, Maharajah of Nepal, 201
Bird Bay, Spitzbergen, 12
Bison. *See* Gaur
Black bear, the Himalayan. *See* Bears, Indian
Black Point, Spitzbergen, 14, 15
Black Sea, coast of the, 32, 34, 41, 42, 44, 50
Blanford, W. T., 283; asserts Ovis Poli and O. Karelini to be the same species, 291
Blankets, 385
Blyth, Mr., on the burrel, 299; on the colour of the serow, 334
Boar, wild (Sus indicus), 237
Boathooks, 10
Boats used for walrus hunting, 9
Bodok (rhinoceros), 234
Bombay (Presidency), tiger hunting in, 203, 205, 206
Boom (markhor), 309
Boonji Plain, 302
Boorendo Pass, 299
Boortsa eurotia (Pamir shrub), 373
Boots, 28
Borneo, 236
Boz Pasang (ibex), 321
British Columbia, essentials of a camp outfit in, 378; sporting expenses, 415
British Museum, specimens in, 221, 238, 239, 249, 260, 266, 268, 283, 313, 315, 331, 335, 340, 341
Brooke, Sir Victor, on the ibex, 180; his big tusker, 233; on the barasingh, 276
Brow-antlered or Eld's deer. *See* Deer
Brown bear. *See* Bear, brown
Bucardo (Aragonese ibex), 179
Buckskin gloves, 389
Buffalo, Indian (Bubalus arni), habitat, 253; method of shooting, 254; measurements, 256
Bukowina, the, 114
Bullets. *See* Rifles
Bunchowr (yak), 240
Burmah, game in, 106, 218, 228, 233, 234, 240, 248, 253, 258, 262, 268, 269, 288
Burmese bears. *See* Bears, Indian

Burmese wild ox (Gavaeus sondaicus), 248
Burrel (Capra cylindricornis or pallasi), 64, 302; Barbary (Ammotragus tragelaphus), 302; Ovis Nahura, vel Burhel, 299; habitat, 299; habits, 300; measurements, 305
Burrhel, Caucasian, 51
Buskerud, Norway, 125

CABRA montes (Andalusian ibex), 179
Cæsar, on the elk, 123
Cambridge Museum, 186
Camp: the equipage and its transport, 377; in British Columbia, 378; buying and hiring pack ponies, 379; weight each animal should carry, 379; horse furniture, 380; use of the horse bell, 380; hobbling and picketing ponies, 380; pack-saddles, 380; sweat-pads and saddle-blankets, 381; tying on packs, 381; the packman and cook, 382; manteaux, 382, 386; cinches and ropes, 382; bags and labels, 382; carrying matches, 383; arrangement of packs, 383; list of stores and requisites for five men for two months, 383, 384; kitchen gear, 385; 'sleeping outfit,' 385; tents, 385; sleeping bags and blankets, 385; air-cushions, 386; making a bedstead, 386; brush beds, 386; character of clothing, 387; foot-gear, 387; cartridge belts, 387; hunting-knife fastening, 388; knickerbockers and trousers, 388; list of clothing for a two months' expedition, 389; early starting, 389; dealing with the pack ponies, 390; midday halts, 391; choice of site for pitching, 392; avoidance of Indian camping grounds, 392; use of horse blankets for human night covering, 392; duties when camped, 393; medicines, 393
Campione, M. (forest ranger at Biolvitskia), 169–172
Canada, game laws in, 416
Cantabrian highlands, Spain, 177
Cape Leigh Smith (Storö), 9
Capercailzie, 146
Capra ægagrus, 64
Capra caucasica, 52, 53
Capra cylindricornis, 52, 53, 55
Capra pallasi, 52, 53
Capra sibirica, 74
Carnicero (Spanish bear), 177
Carpathians, the, chamois in, 77, 81
Carpeto-Vetonico mountains, (Spain), 179
Cartridge belts, 387
Cartridge tins, 407
Cartridges, 405, 407
Cashmere, shikaris and coolies in, 184; sport in, 274, 275, 277, 312, 313, 325, 332, 333, 334
Cashmere stag (Cervus cashmirianus; Cervus Wallichii), 274; antlers, 275; habitat, 277; calling season, 278; method of stalking, 280; measurements, 284
Caspian Sea, 50, 196, 342
Castile, 179
Caucasian brown bears, 40–42, 58
Caucasus, sport in the, 22; modes of reaching, 23; outfit for, 24; guides, 25; conduct towards natives, 26; sleeping in the mountains, 26; camp necessaries, 28; foot gear, 28; cost of an expedition, 29; language, 29; interpreters, 30; the north-west, 30; hunting the wild boar, 31–35; the ollèn, 35–37; the roe, 37; superstitions in, 38; the zubre, 38, 39; southern slopes of,

39; its vegetation, 39; the brown bear, 40-42, 58; varieties of bear, 41; the barse, 42; plains of, 44; djerán, 45-47, 342; mountaineers of Marmisson, 48, 342; mountain game of the, 48; home of the Ossete and the tûr, 49; chamois, 50; tûr, burrhel, 51; Hircus ægagrus, 52; modes of hunting tûr, 53; clothing for, 56; mountaineering necessaries in Ossetia, 57; stalking tûr, 58; a tûr shooting adventure, 59-63; mountain mists, 62; superstitions of natives, 63; the aurochs, 65-72; ibex, 321

Cayuses, 380, 392

Central Alps, 117

Central Asia, 363, 373

Central India, bear in, 188, 190; lions, 195; method of hunting tigers in, 203; notes on game in, 211, 213, 219, 222, 224, 228, 240, 253, 254, 259, 265, 267, 353

Central Indian horse, their method of panther-hunting, 221

Central Provinces, India, 360

Ceumern, Governor-General de, 169, 172

Ceumern, Madame de, 169

Ceylon, game in, 196, 218, 221, 228, 240, 253, 257, 262, 288, 328

Chakrata, India, 219

Chamba, Himalayas, 219, 325

Chamois, Caucasian, 50, 51

Chamois, Spanish (Antilope rupicapra), 175, 176, 179

Chamois, Swiss, 77

Chamois, Tyrolean, 77; sport in peasant shoots, 78; poachers and keepers, 80; shooting season, 80; heads and horns, 81; preserves and peasant-shoots, 82; cost of a preserve, 83; rights of chase, 84; stalking, 85; a typical stalk, 86-92; another stalking incident, 93-97; rifles and kit for stalking, 98-100; driving, 100-109; jumping powers, 105; history of, 109

Changchmeno Valley, 250, 335

Chanko (Thibetan wolf), 226

Chaorang (four-horned antelope), 356

Charsingha (four-horned antelope), 356

Chatterton, Mr., death of, 255

Chenab, the, 345

Chikara (Indian gazelle), 355

China, 331

Chiru (Choos), Thibetan antelope, 335

Chita, or hunting leopard (Felis jubata), its method of striking its prey, 211; habitat, 222; used for hunting antelopes, 222; habits, 222; measurements, 225

Chital (Chitra), spotted deer, 264

Chittagong, 248

Choka (four-horned antelope), 356

Chota soor (pigmy hog), 237

Christian, Norway, 125

Christiania, 123-125

Chumatung, on the Indus, 300

Chumba, Himalayas, 184, 188, 215, 329

Cinches for packing, 382

Cintra hills, 179

Circassia, 31, 38, 39

Clothing, for arctic sporting, 3; for the Caucasus, 56; for the Tyrol, 100; for North America, 387; list of, for a two months' expedition, 389

Cobbold, Mr., 73

Cocoa, advantages of, for sporting expeditions, 384

Cook and packman, in a sporting expedition, 382, 383

Cookson, Lieut-Col. Fife, on a tiger's method of stalking a bait, 209

Coolies, Indian, number required in shooting expeditions, 183

Cooper, Frank., 37

Corpse Rocks, Spitzbergen, 20
Cossack boar hunters, 32
Cossim Bazar Island, 197
Crampons, 99
Crasova, Novgorod, 164
Crimea, 38
Crocodile, Indian method of catching, 238; measurements, 239
Cumberland, Major, 283, 342

Daghestan, 35, 37, 52
Danes Island, Spitzbergen, 18, 19
Danford, Mr., his estimate of the altitudes preferred by the Persian and Sindh ibex, 321
Dashkat (Datchnar) valley, 313
Daudpore, 197
David, Père, discovers a piebald bear, 194; and the burrel, 299; the Thibetan capricorn, 334; the Budorcas taxicolor, 335
Day's march with pack ponies, routine of, 389-393
Deer, barking, or rib-faced. *See* Deer, rib-faced
Deer, brow-antlered or Eld's (Rucervus vel Panolia Eldii), 268; method of hunting, 269, measurements, 273
Deer, rib-faced, or barking (Cervulus aureus, vel Muntjac), habitat, 288; characteristics, 288; curious clicking noise emitted by, 289; measurements, 290
Deer, sambur. *See* Sambur
Deer, Schomburgk's (Rucervus Schomburgkii), 266; measurements, 273
Deer, Spanish fallow (Cervus dama), 176
Deer, spotted (Axis maculatus), 264; stalking, 264; gregarious, 264; measurements, 271
Deer, swamp (Rucervus Duvaucelli), 265; antlers, 266; habits, 267; measurements, 272
Deesa, 362
Dera Ghazi Khan, 315
Dera Ismail Khan, 315
Dewanna (Kirghiz hunter), 366, 369-373
Deyhra Doon, 228, 262, 265
Diamond-hitch in packing, 381, 382
Dinapore, 236
Djerán, Caucasian (Gazella gutturosa), 44, 45
Djik-vee (tûr), 54
Doda (four-horned antelope), 356
Dog, wild, Indian (Cuon rutilans), 226; destructive character, 227; measurements, 227
Dogs, for hunting elk, 135-148; Russian, 165
Dolomites, the, chamois in, 81; injury done by peasant-shoots in, 82
Donkh (Dhong), yak, 249
Dras, India, 277
Dress. *See* Clothing
Duff, Captain, on yak stalking, 250
Dufferin, Lord, 168
Dumba, Constantine (Secretary to Austrian Embassy), 163, 165
Dunsmuir, Mrs., Victoria, B.C., 18
Durand, Sir E., on tiger hunting, 200

Edinburgh, Duke of, 113
Ee (Thibetan lynx), 224
Egypt, 322
Eichwald, in the Caucasus, 30
Ekaterinodar, 34, 35
Elbruz, 23, 26, 28, 30, 31, 38
Eld's deer. *See* Deer, Brow-antlered
Elephants, their treatment of dead animals, 214; Indian (Elephas indicus), habitat, 228; points of difference from African species, 228; best mode of shooting, 229; charging, 229; dimensions,

232; measurements, 233; small-bores for shooting, 401
Elias (Lapp hunter), 144
Elk, Scandinavian, 123; ancient writers on, 123; Government protection of, 124; number killed yearly in Norway, 124, 125; period during which it is legal to kill, 125; local enactments in Sweden regarding, 125; comparison with the moose, 126; determining the age, 126; antlers, 127–129; bodily measurements, 130; weight, 131; vocal sounds emitted by, 131; the rutting season, 132; non-gregarious, 134; methods of hunting, 135; driving, 135; hunting with the loose dog, 136; with the leash hound, 138; disadvantages of hunting with the loose dog, 142; best stalking ground, 144; Passop, the Lapp dog, at work, 145; stalking, 146–150; intelligence, 149; a hunting incident, 150, 151
Elk hounds, 137–148
Ellis, Hon. C., 291
Epirus, the, chamois in, 77, 81
Erskine, Colonel, on the habitat of the swamp deer, 265, 266
Esquimaux dogs, 137
Estremadura, 176, 179
Europe, forests of Central and Northern, 114
European wolf (Canis lupus), 226
Express bullets, 368
Express rifle, 98, 394–399, 409, 410. *See* Battery

FALKOVA, Novgorod, 163
Fannin, John (curator of the Museum of British Columbia), his directions for skinning beasts whole, 417
Field-glasses, 99, 147, 370
'Field Sports of the North of Europe,' 135
Finmarken, 125
Fitz-Herbert, Major, on hog-deer shooting, 263, 346; adventures with black buck, 351, 352
Flannel clothing, 387
Foot gear, 28, 387, 389
'Forest and Stream,' Yo's articles on packing, 382
Forsyth, Captain, his division of tigers into three classes, 197, 199, 200; on the damage done by them, 198; and their method of killing their prey, 211; thinks panthers escape in drives by taking to trees, 220; on the habits of the bison in the rainy season, 240; on the bull nylghao, 245; on the habitat of the buffalo, 253; on the use of dogs in buffalo hunting, 257; 267
'Fortnightly Review,' quoted, on elk hunting, 144
Fosbery, Colonel, V.C., his invention of the Paradox gun, 399-401
Four-horned antelope (Tetraceros quadricornis), 356
Fox, 146; Spanish, 176
Franz Joseph Land, 8
'Freeshooters of the Alps,' 80

GAINDA (Gaira, Gonda), rhinoceros, 234
Galicia, 175
Gamsbart (beard of the chamois), 82
Ganges, the, 325, 329
Garrod, Professor, 248
Gártope, 339
Gat, the, Spitzbergen, 20
Gaur (Gavaeus gaurus), habitat, 240; characteristics, 240; method of hunting, 242; measurements, 246

GAZ

Gazella gutturosa, 44, 45
Gazelle, Thibetan (Gazella picticaudata), 342; measurements, 344; difficult to stalk, 345
Ghauts, Western, 245
Ghayal (gayal), or crocodile, 238
Ghor khur (wild ass), 362
Ghour (wild ass), 362
Gilgit, 315, 319, 368
Gilgit, Yassim, Chitral, and Badakshan route to the Pamir, 365
Gloves, 57; buckskin, 389
Goa (serow), 332; Thibetan gazelle, 342
Gōn (Gond, Goen, Goenjak, Gaoni), swamp deer, 265
Goolga (Ovis Poli), 299
Gooral (Nemorhœdus Goral), 329; best way of hunting, 331; Chinese, 331; Japanese, 331; measurements, 337
Gor (rhinoceros), 234
Greenaway, Major, 332
Grizzlies, 18, 42
Grodno, 168
Gulcha (Poli rams), 366
Gulf of Bothnia, 134
Gun cases, 408
Günther, Dr., 73
Gurais, India, 277
Gurwhal, India, 184, 257, 288, 289, 325, 329, 333
Guzerat, 194

HAKKE-PIKS (boathooks for ice work), 10
Haldwani, India, 265
Half-moon Island, Spitzbergen, 18
Halj (serow), 332
Halleberg, the, 136
Hamilton, Dr. F. Buchanan, 248
Hammerfest, 2
Hammerless guns, 402
Hangal (Cashmere stag), 274
Hans (Tyrolese stalker), 93–97
Haramook, India, 277
Harness for leash hounds, 138
Harpooners, 12
Harpoons, 9

HOW

Harput (snow bear), 186
Hati (elephant), 228
Hedemarken, 125
Hemlock for brush bedding, 386
Henry Express, 160, 169; double, 371
Heran (Thibetan antelope), 335
Himalayas, the: best weapon for hunting in, 182; tents, 183; transport, 183; expenses, 184; rule regarding shooting grounds, 185; game in, 215, 218, 240, 257, 261, 262, 265, 274, 299, 303, 309, 319, 325, 329, 332
Hindu Kush, 374
Hinlopen Straits, 8, 9, 18
Hinter Authal, Tyrol, 105
Hinter Riss, Tyrol, 81, 101
'Hints to Travellers,' Royal Geographical Society's, 377, 395
Hircus ægagrus (ibex), 52, 53
Hoang-ho river, 292
Hobbles for horses, 380
Hodgson, B. H., on the horns of the Sikkim stag, 283; on the early breeding of musk deer, 287; on the burrel, 299
Hog, the pigmy (Porcula salvania), habitat, 237; measurements, 238
Hogdeer (Axis porcinus), 261; habitat, 262; method of shooting, 262; measurements, 271
Hohe Geschnürr, Tyrol, 95, 96
Hohenlohe, Prince Hermann, 105
Holland & Holland, gunmakers, 13, 98
Hopenöerne, 9
'Horn measurements,' Mr. Rowland Ward's. *See*, largely cited, under Measurements
Horns, different manner of twisting, between wild and domestic animals, 315
Horse blankets, 392
Horse furniture, 380
Howard, Colonel, 188; on bear

hunting, 190; on the comparative measurements of European chamois, 331, 355. *See* Measurements
Hudson Bay blankets, 385
Hungary, North, red deer in, 114, 117
Hunneberg, the, 136
Hunting-shirts, Indian, 387
Hyæna, striped (Hyæna striata), 227; measurement, 228
Hyderabad, 222

IBEX (Capra caucasica), 51, 55, 56, 57, 64
Ibex (Capra sibirica), 74
Ibex, European (Capra ibex), 322; measurements, 324
Ibex, Himalayan (Capra sibirica), 318; habitat, 319; method of stalking, 319; measurements, 323
Ibex, Neilgherry (Hemitragus hylocrius), 328; measurements, 336
Ibex, of Persia and Sindh (Capra ægagrus), 321; measurements, 324
Ibex, Spanish (Capra hispanica), 174, 175, 179; dimensions of heads, 180; (Capra pyrenaica), 322
Imu (serow), 332
Inderöen, 125
India, shooting in: best weapons, 182; outfit, 183; transport, 183; rule regarding shooting grounds, 185; bear, 186; lion, 194; tiger, 196; panther, 218; leopard, 222; lynx, 224; wolves and wild dogs, 225; hyænas, 227; elephant, 228; rhinoceros, 233; Malay tapir, 236; wild boar, 237; pigmy hog, 237; crocodiles, 238; gaur, 240; wild ox, 248; yak, 249; buffalo, 253; sambur, 257; hogdeer, 261; spotted deer, 264; swamp deer, 265; Eld's deer, 268; Cashmere stag, 274; Sikkim stag, 282; musk deer, 283; barking or rib-faced deer, 288; wild sheep, 291; burrel, 299; shapoo, 302; oorial, 304; markhor, 309; ibex, 318; ther, 325; gooral, 329; serow, 332; takin, 334; Thibetan antelope, 335; Saiga antelope, 340; Thibetan gazelle, 342; Indian antelope, 345; rifles and bullets suitable for sport in, 398, 399, 401
Indian gazelle (Gazella Bennetti), 335
Indian, North American, camping grounds, character of, 392
Indus, the, 300, 303, 304, 308, 312, 315, 345
Ingur, the, 39
Inn Valley, Tyrol, 82, 101
Interpreters, 30, 369
Irtish, Upper, Siberia, 65
Isar, the, 101
Izard (French chamois), 179

JACKALS, 41
Jagla (ther), 325
Javato (Spanish boar), 176, 177
Jemtland, 125, 126
Jerdon, Dr., on snaring black bear, 188; on the eyes of the gaur, 241; on the spotted deer, 265; 266, 288; on nylghao, 353; on mouse deer, 360
Jerow (sambur), 257
Jeypur, 222
Jhangal (serow), 332
Jhank (spotted deer), 264
Jharal (ther), 325
Jhelum, the, 304, 325, 345
Jhula (ther), 325
Jolsva, Hungary, 115
Joshimath, 300
Jumbo (the Zoological Gardens elephant), 233
Jumna, the, 329
Jung Bahadur, the story of his

device to secure food for his army, 253
Jungli Bukra (rib-faced deer), 288
Jungli kutta (wild dog), 226

KABARDAH plains, Caucasus, 31
Kachin hills, 329
Kajnag mountains, 313, 325, 329
Kakur (rib-faced deer), 288
Kala Bhalu (black bear), 186
Kale (ibex), 318
Kamish (Caucasian reed), 31, 33, 35
Kamtchatka, 292
Kara Kirghiz hunters, 366–376
Kara Korum, the, 364
Karakash, 250
Karatan, 291
Kareim (brigand), 52
Karelin (Russian explorer), 368
Kariâs, 44, 45, 46, 47
Kart (ther), 325
Kashgar, 342
Kashmir, Maharajah of, presents Sir Frederick Roberts with poli head, 374
Kastura (musk deer), 283
Kayeek (ibex), 321
Kharwee (a jungly growth), 243
Khatmandu, 253
Khelat, 309
Kherdecht (wild ass), 362
Khokand, 364, 365
Khyenhsen (rhinoceros), 234
Kielang, India, 223
Kilmorey, Earl of, 155; his account of a bear drive in Russia, 161–167
King's Bay, Spitzbergen, 9 note
Kinloch, Colonel, his 'Large Game Shooting,' 183; on the snow and black bear, 187–215; panther, 221; wolves, 226; elephant, 232; disbelieves in wild gayal, 248, 255; thinks the Sutlej the boundary of the sambur, 257; describes the hogdeer as the rabbit of Indian battues, 261; swamp deer, 266; musk deer, 288; kakur, 289; supports the theory that markhor eat snakes, 309; and that there are four varieties of it, 313; on the horns of the markhor, 315; on ther, 327; serow, 333; and the Thibetan antelope, 339; on nylghao, 354; on ravine deer, 356. *See* Measurements
Kirghiz, the, 73; as hunters, 366, 370, 376
Kirghiz yourts, 374
Kishengunga river, India, 275, 277
Kishtwar, 325
Kitchen gear for a sporting expedition, 395
Klapjagt (an elk drive), 135
Knife fastenings, 388
Knives, 388
Kodor, the, 39
Kolenati, cited, 44
Koulan (wild ass), 362
Kras (ther), 325
Kraus Haven, Spitzbergen, 15
Kuban river, 30, 31, 33, 35, 37, 38, 39
Kuch (oorial), 304
Kuda-ayer (Malay tapir), 236
Kuenluen mountains, 299
Kumaon, 288
Kûr, the, 44
Kurrè (elk hound), 140, 141
Kutais, 30, 53
Kutch, 194, 362
Kyang (Equus hemionus) 361; measurements, 362

LABA, the, 38
Labels for packs, 382
Ladak, game in, 283, 292, 293, 298, 299, 300, 302, 342, 345, 364
Ladak, Kara Korum, Shahdula, and Yarkand route to the Pamir, 364
Lady Franklin's Bay, Spitzbergen, 12

Lagá Bagá (panther), 218
Lahoul, India, 184, 223, 325
Lake Kallsjön, Sweden, 141
Lake Tsomoriri, 342
Lake Wenern, 136
Lakhar baghar (striped hyæna), 227
Lal Bhalu (snow bear), 186
Lamb, Captain, on tiger hunting, 207 ; on buffalo stalking, 254
Lamchitta (clouded panther), 221
Lamont's 'Yachting in the Arctic Seas,' 6
Lance used in walrus hunting, 10
Langour, 332
Lansdell, Rev. Dr. H., 365
Lapp elk hunters, 130, 133, 144, 145, 147, 150, 151
Lappen (flags) for chamois driving, 101, 104-106
'Large and Small Game of Bengal,' Captain Baldwin's, 211
'Large Game Shooting,' Colonel Kinloch's, 183
Leash hounds for hunting elk, 137-148
Leh, 249, 303
Leigh Smith, Mr., 18
Lenkoran, 34, 43-45
Leopard, 43 ; or chita (Felis jubata), habitat, 222 ; used for hunting purposes, 222 ; measurement, 225 ; the snow, or ounce (Felis uncia), 223 ; measurements, 225
Lesghians, the, 49, 52, 68-71
Licences for shooting in Spain, 175
Lidder river, 274
Lilghao (nylghao), 353
Linzinthung Plains, the, 250
Lion, Indian (Felis leo), almost extinct, 194 ; habits, 195 ; measurements, 195 ; method of striking prey, 211
Lithuania, 167
Littledale, St. George, 22 ; on the ollen, 36 ; his game trophies, 52 ; tûr shooting, 55, 59-63 ; shooting the Caucasian aurochs, 65-72 ; on the Ovis argali of Mongolia, 73-76 ; stalking the Ovis Poli of the Pamir, 363-376
Littledale, Mrs., 66, 67, 68, 365, 368
Lloyd, Mr., on elk driving, 135
Lokketone, or Lokton (elk's call), 131, 132
Lower Bengal, 355
Lulliapoora, India, a bear hunt at, 190
Lyman rifle sight, 98
Lynx, the, 43
Lynx (Felis pardina), 176
Lynx, red (Felis caracal), 224
Lynx, Russian, 164
Lynx, Thibetan (Felis Isabellina), 224

MACINTYRE, General, his plan for sitting up over a tiger, 209 ; 261, 300, 330
McMaster, Mr., cited, 265
Macrae, Mr., 248
Madras (Presidency), method of tiger hunting in, 203, 205, 206 ; 245 ; importance of the Neilgherry ibex in, 328, 353
Maha (sambur), 257 ; swamp deer, 265
Mahouts, conduct of, while tiger hunting, 199
Maikop, 38
Mains (buffalo), 253
Malabar coast, 355
Malay Peninsula, 234, 236, 240, 258, 268, 288, 334
Malo Vyschera, Novgorod, 163, 164
Mamisson Pass, 48, 49, 51
'Mammalia of India,' Sterndale's, 334. *See* Measurements
Manipur, 234, 268
Mansarovárá Lake, 335
Mansel, Major, adventure with a tiger, 207

Manteaux (waterproofed canvas pack coverings), 382, 386
Maral (Daghestan deer), 37
Maral Bashi, 342
Marco Polo, on the Ovis Poli, 363, 364
Markhor (Capra megaceros, vel Falconeri), 309; difficult to shoot, 310; varieties of, 312; habits, 313; habitat, 315; measurements, 316
Marten, 146
Masaknaba (musk deer), 283
Mason, Mr., on the Malay tapir, 236
Matches, mode of carrying, 383
Maximilian, Emperor, 100, 111
Measurements of game, tables of: Ailuropus melanoleucos, 194; Antilope Bezoartica, 357; Arakanese capricorn, 337; Axis porcinus, 271; A. maculatus, 271; Bos grunniens, 252; Bubalus arni, 256; Budorcas taxicolor, 338; Canis lupus, 227; Canis pallipes, 227; Canis laniger, 227; Capra megaceros, 316; Capra Jerdoni, 317; Capra sibirica, 323; Capra ægagrus, 324; Capra ibex (Tyrol), 324; Capra sinaitica, vel nubiana, 324; Capra wali, 324; Capra jemlaica, 336; Cervulus aureus, 290; Cervus cashmirianus, 284; C. affinis, 285; C. maral, 285; C. Eustephanus, 285; Cuon rutilans, 227; Elephas indicus, 233; Equus hemionus, 362; Felis leo, 195; F. tigris, 212, 216; F. pardus, 225; F. diardii, 225; F. jubata, 225; F. uncia, 225; Gavæus gaurus, 246; G. sondaicus, 249; Gazella gutturosa, 344; G. subgutturosa, 344; G. picticaudata, 344; G. Bennettii, 358; Hemitragus hylocrius, 336; Hyæna striata, 228; Meminna indica, 359; Nemorhœdus Goral, 337; Nemorhœdus bubalinus, 337; Ovis Ammon, 294; O. Poli, 296; O. Hiensi, 297; O. nigrimontana, 297; O. nivicola, 297; O. Brookei, 297; O. Nahura, 305; O. Vignei, 306; O. cycloceros, 307; O. Blanfordi, 307; Pantholia Eldii, 273; Pantholops Hodgsonii, 343; Porcula salvania, 238; Portax pictus, 358; Red deer from Tyrol, &c., 286; Rhinoceros indicus, 235; R. sondaicus, 235; R. lasiotis, 235; R. sumatrensis, 235; Rucervus Duvaucelli, 272; R. Schomburgkii, 273; Rusa Aristotelis, 270; Saiga tartarica, 343; Tapirus malayanus, 237; Tetraceros quadricornis, 359; Ursus Isabellinus, 194; U. torquatus, 194; U. labiatus, 194; U. malayanus, 194
Measurements of game trophies, systems of, 420
Medicines for sporting expeditions, 393
Mergui, 237
Metal adornments, disadvantages of, in sporting, 388
Mingrelia, 37
Mingrelia, Prince of, 53
Mists, mountain, 62
Moccasins, 28, 378, 384, 387, 389
Moidl (Tyrolese herd-girl), 93–97
Mongolia, the yellow goat of, 341
Monte Rosa, 104
Mooghan, the, 44, 47, 48
Moose, American, comparison with the elk, 126
Moravian missionaries, 223
Morier, Sir Robert, 364
Moscow Zoological Gardens, 39
Mountain spectres, 63
Moupin, Thibet, 299

Mouravitchka (Caucasian bear), 41
Mouse deer (Meminna indica), 360
Muggar (crocodile), 238
Mundla, India, 266
Munkacs, Carpathian Alps, 115
Münster, Count Alexander, 163, 165
Muntjac (rib-faced deer), 288
Musk-deer (Moschus moschiferus), habitat, 283; value of the musk-pod, 287; measurements, 287
Mussulmans, as servants in shooting expeditions, 185
Mysore, 328, 346, 353

NAIN, norn (gooral), 329
Nain Tal, India, 265
Naltchik, 24, 31
Namdal, 125
Namsos, Norway, 144
Nanga Parbat, Astor, 368
Napo (namoo), burrel, 299
Natural History Museum, Kensington, heads of tûr in, 51–53
'Natural History of India,' Sterndale's, 334. *See* Measurements
Neilgherries, 328
Nepal, method of hunting the tiger in the Terai, 199; ringing tigers, 200; 213, 221, 233, 234, 237, 240, 253, 254, 262, 265, 267, 283, 325, 339
Nepal, Bir Shumshir, Maharajah of, 201
Nerbudda, the, 253, 266
Nicolaïevitch, Alexei (Russian bear hunter), 164, 165
Nicolaïevitch, Dmitri (Russian bear hunter), 164
Nicolaïevitch, Ivan (Russian bear hunter), 164
Nilghao (nylghao), 353
Niti Pass, 250, 253, 300, 339
Nordenskjöld, on Polar bears, 17
Nordland, 125
Nortalash (Russian Lapps), 154
North Africa, 228
North America, clothing for, 387; method of transporting freight in, 379
North Cape, Spitzbergen, 12
North East Land, 8, 9
North-West Provinces, India, 222, 345, 353
Norway, elk in, 124, 125, 127, 128, 132, 133, 134, 135, 136, 144, 148; brown bear hunting in, 155
'Nouveau voyage vers le Septentrion,' quoted, 123
Novaya Zemlya, 1
Novgorod, 163
Nowgong, India, 228
Nyan (Ovis Ammon), 291
Nylghao (Portax pictus), 353; haunts, 353; hunting, 354; in captivity, 354

OLLÈN (Caucasian red deer), habitat of the, 35; characteristics, 36; growing scarcity of, 37
Oorial (Ovis cycloceros), habitat, 304; measurements, 307; best mode of hunting, 308
Oorin (shapoo), 302
Orissa, 265
Ossetes, the, 49, 50
Ossetia, 41, 57
Oude, Nabob Vizier of, 210
Oudh, 265
Ounce, or snow leopard (Felis uncia), 223; fierce enemies of ibex, 224; measurements, 225
Overalls, canvas, 388
Ovis Ammon, 366
Ovis Argali, the, of Mongolia, 73–76
Ovis Blanfordi, 309
Ovis Poli, the, 38, 73–76; of the Pamir, 363; Marco Polo on its home, 363; narrative of a stalk, 366–373; Karelin

and Severtzoff's introduction of, to Europe, 368; a stalk in the Southern Pamir, 373-376; head in the possession of Sir Frederick Roberts, 374; vitality, 375
Ox, Burmese wild (Gavæus sondaicus), 248; measurements, 249

PACK-PONIES, routine of a day's march with, 389
Pack-saddles, 380
Pamir, the, 73, 74, 291; Marco Polo's description of, 363; Chinese pilgrims' account, 364; routes to, 364, 365; Russian opposition to English travellers, 364; character of the country, 365; stalking the Ovis Poli in, 366-376; the Boortsa eurotia, 373; Kirghiz yourts, 374
Pangi, India, 224
Pangong Lake, 250
Panther (Felis pardus), habitat, 218; a universal nuisance, 218; methods of killing, 219; measurements, 225
Panther, clouded (Felis diardii vel macrocelis), 221; measurement, 225
Para (hogdeer), 261
Paradox, the, 35 note, 399-401, 405
Parfleches, 380
Pasang (ibex), 321
Passop (Lapp dog), 145, 151
Patiala, Maharajah of, adventure with a trapped tiger, 210
Paul, Mr., 196
Peasant-shoots, 78; in North Tyrol, 82
Pechinka Fiord, 156
Pegu, 334
Percy, Lieut.-Col. Reginald Heber, on Indian shooting, 182 *et seq.*
Percy, Major Algernon Heber, on brown bear hunting, 154-169; shooting aurochs at Biolvitskia, 167-173
Persia, 228, 283, 321, 342
Peshawur, 304
Phasis, the, 35
Phillipps-Wolley, Clive, on shooting bear and túr in the Caucasus, 22-64; on the equipment and transport of a camp, 377-393
Phoca hispida, 9
Picket pegs, 380
Picos de Europa, Cantabrian highlands, 179
Piebald bear of Eastern Thibet. *See* Bears
Pigmy hog. *See* Hog, pigmy
Pij (gooral), 329
Pike, Arnold, on walrus and polar bear hunting, 1-21
Pilibhit, India, 265
Pilis Mountains, Carpathians, 115
Pir Punjal Mountains, 313, 325, 327, 329
Pisai (mouse deer), 360
Pisora (mouse deer), 360
Plains of India, the: best weapons for use in, 182; tents, 183; outfit, 183; transport, 183; servants, 185; shooting grounds, 185
Plastouns (Caucasian boar hunters), 32
Plaza de Almanzor, 179
Pliny, on the elk, 123
Poland, 167
Polar bear, 15; food, 16; habits, 17; size and weight, 18; haunts, 18; phases of hunting, 19-21
Ponies, buying and hiring, in North America, 379; weight to carry, 379
Poti, 35
Pottinger, Sir Henry, Bart., on the Scandinavian elk, 123-153
Prejevalski, M., 299
Prince Consort, the, 100
Provisions for five men for a two months' expedition, 383

Punjab, 222, 345
Purdey muzzle-oading rifle, 159
Putney Hills, India, 245
Pyrenees, the chamois in, 77, 81; Spanish, 177, 179, 180

QUETTA, 309, 315

RACHE (markhor), 309
Radauc, 115, 116
Rabcha, 39, 40
Radde, Prof., on the wild boar, 31; on the ollèn, 36; on the barse, 43
Rajpootana, 345, 356
Ram Hun (wild dog), 226
Ramoo (serow), 332
Rass (Ovis Poli), 291
Ratibor, Duke of, 115
Ratwa (rib-faced deer), 288
Ravi, the, India, 345
Ravine deer (Indian gazelle), 355
Rebeco (Spanish chamois), 179
Recoil heelplates, 404
Red deer, Austro-Alpine, 83; modern compared with mediæval bags, 113; in Northern Hungary, 114; antlers, 115, 116; stalking, 117–122; rutting season, 118; its call, 118–122
Red deer, Caucasian, 35–37
Red deer, Spanish (Cervus elaphus), 176; haunts, 178; measurements of antlers, 178, 179
Red Forest (Krasnoe Lais), Ekaterinodar, 34, 35
Reech (sloth bear), 186
Reid, Sir Charles, cited, 196
Rekis-öerne, 9
Reha (striped hyæna), 227
Rests, shooting from, 411
Rhinoceros: R. indicus; R. sondaicus; R. lasiotis; R. sumatrensis, habitat of the four varieties, 233; points of difference between the Asiatic and African, 234; method of hunting, 234; measurements, 235
Rib-faced or barking deer. *See* Deer
Rice, Colonel, 269
Richters, Dr. F., 322
Roberts, Sir Frederick, poli head in his possession, 374
Roe-deer (Cervus capreolus), 37; Spanish, 175, 176
Rohan, Prince, 115, 116
Rondu, 303
Roos (Rous), musk-deer, 283
Roosh (Ovis Poli), 291
Ropes for packing, 382
Ross, Edward, on the battery, 412
Ross's telescope, 367
Roz (nylghao), 353
Rubashevsky, Colonel, 34
Rücksack, the, 87, 94, 99
Russia, bears in, driving, 161; arranging for an expedition in the province of Novgorod, 161; sledging, 163; cold at night, 163; account of the drive, 164–167; the dirge descriptive of the death of the bear, 166
Russia, the Czarevna of, 373, note
Russian Central Asia, 364
Russian Lapland, brown bear hunting in, 154
Russian Lapps, their dread of bears, 154, 156, 159

SABINE, Captain, on Polar bears, 17
Saddle-blankets, 381, 382
Safed chita (snow leopard), 223
Saghalien, island of, 196
Saiar Mountains, the, 74
St. Petersburg, 161, 162, 163, 172
St. Trefan's Lake, Lapland, 156
Saiga antelope. *See* Antelope
Sál forest, India, 266, 267, 268
Sahbbir (serow), 332

Salmon, 154
Salt range, Jhelum, 308
Salzburg, 120
Samarcand, 291
Sambur (Rusa Aristotelis), habitat, 257; characteristics, 258; methods of hunting, 258; not prolific, 261; measurements, 270
Sammlung, the, castle of Moritzburg, 116
Sanderson, G. P., quoted, 197, 198; on a tiger's method of killing, 211; 212, 213, 215, 218, 220, 221; on elephant shooting, 229; and charging, 231; 232, 240, 242, 244, 248, 253, 345; on nylghao, 353. *See* Measurements
Sand-grouse, 44
Sano-banel (pigmy hog), 237
Santander, 175
Saxe-Coburg, Duke of, 81, 113; death of, 85 note; a 'treibjagd' in his preserves, 101
Saxe-Coburg Gotha, Prince Philipp of, 115
Saxony, Elector George of (1611–1656), 113
Saxony, King of, 116
Scandinavian elk. *See* Elk, Scandinavian
Scandinavia, elk hunting in, 123–153
'Scandinavian Adventures,' 135
Schoenborn, Count, 115
Schomburgk's deer. *See* Deer
'Scientific Results Second Yarkand Mission,' 342
Sclater, Mr., on Capra ægagrus, 53; on the shapoo and oorial, 302, 322
Scotland, 100, 114, 117
Selous, F. C., on the battery, 412
Senckenberg Museum, Frankfort, 186, 322
Serow (Nemorhœdus bubalina), characteristics, 332; habitat, 332; scarce and wary, 333; measurements, 337
Seven Islands, Spitzbergen, 12
Severtzoff, M., on the habitat of the Ovis Poli, 291; first introduces the animal to Europe, 368
Sewalik Mountains, India, 240, 259, 329
Shahdula, 364
Shapoo (Ovis Vignei), characteristics, 302; habitat, 303; difficult to hunt, 303; measurements, 306; points in its favour, 361
Shaw, O., his large bag of wild sheep, 299; shoots a serow with a white mane, 334
Sheep, wild (Oves Poli, Ammon, &c.), habitat, 291; characteristics, 292; difficulty of shooting, 298; measurements, 294–297, 305–307
Sheikh Budin, 315
Sher-babbar (lion), 194
Shigar, 303
'Shikari' rifle case, 408
Shikaries, their mistake in stalking, 320
Shillingford, C.A., of Munshye, 196
Shillingford, F. A., 196; on the measurements of tigers, 212; on their age, 213
Shou (Sikkim stag), 282
Siagosh (red lynx), 224
Siam, 228, 234, 236
Sierra da Estrella, 179
Sierra de Gredos, 179
Sierra Morena, the, 178
Sierra Nevada, 180
Sights for rifles, 98, 408–412
Sikkim, 237, 332
Sikkim stag (Cervus affinis, vel Wallichi, Cervus Eustephanus), 282; measurements, 285
Sinaitic Peninsula, 322
Sindh, 321, 332, 333, 362
Sindh river, 274
Singh (lion), 194
Sirmoor Rajah, the, 233
Siwash (North American Indian hunter) 382

Skeen (ibex), 318
Sledging in Russia, 163, 164
Sleeping bags, 26, 385
Slings, rifle, 407
Sloth bear. *See* Bears
Small-bores for elephant shooting, 401
Snapo (Snamoo), burrel, 299
Snow bear. *See* Bears
Sooroo, India, 277
South European Alps, 114
Southern India, 188, 206, 222, 228, 240; sambur hunting in, 260; 265
Spain, large game in, 174; expense of sporting, 174; driving, 174, 176, 178; game laws, 175; licences, 175; close-time, 175; varieties of game, 176; hunting wild boar, 176; hereditary bear hunting, 177; red deer, 178; chamois, 179; ibex, 179; 180
Spiti, 325
Spitz dog, 137
Spitzbergen, 1, 2, 7, 12, 14, 15, 18, 19
'Sportsman's Guide to Kashmir and Ladak,' Major Ward's, 183
'Sportsman's Vade Mecum,' by K. C. A. J., 183
Spotted Deer. *See* Deer
Srinugger, 277
Steigeisen (crampons), 99
Sterndale, R.A., on tigers, 196; 212, 215, 218, 219, 220; on the chita, 222; 224, 228, 233; on the Malay tapir, 236; 248, 258, 265, 263, 268, 276, 287, 299, 334, 341; on nylghao, 354; on four-horned antelopes, 356; on mouse-deer, 360; on the wild ass, 362. *See* Measurements
Stian (snow leopard), 223
Stick-rests, 355
Stocks of rifles, 405, 406
Stony Indians, 415
Stor Fjord, Spitzbergen, 18
Stordal, 125
Stores, list of, for an expedition in North America, 383
Stoves, 163
Strecke (Tyrolese venery custom), 107
Styria, 78, 117, 120
Suez, 322
Sukhoum, 35, 40
Suleiman mountains, 321
Sumatra, 236, 334
Sunderbuns, the, 234, 253, 254, 266
Sungrai (Eld's deer), 268
Sutlej, the, 250, 253, 257, 319, 345
Svânetia, 23, 27, 41, 42, 48, 50, 51, 53, 55
Swamp-deer. *See* Deer
Sweat-pads, 381, 382
Sweden, elk in, 124, 125, 134, 135, 136, 143, 208
Switzerland, laws to prevent extermination of chamois in, 77
Syrian bears, 42

TABATGAI Mountains, the, 73
Tahr (ther), 325
Takin (Budorcas taxicolor), 334; characteristics, 334; measurements, 338
Taman, Caucasus, 31
Tangrol (ibex), 318
Tapir, the Malay (Tapirus malayanus), 236; measurements, 237
Ta-ra-shu (Malay tapir), 236
Tartars, nomad, 44; hunting the djerân, 46, 47; their jealous guardianship of their frontier, 249
Taurus mountains, 321
Tavoy, 237
Taxidermy, 413; price of heads, 415; preserving heads with the skin on, 416; sketches and photographs, 416; skinning a horned head, 416; skinning a beast whole, 417; drying and dressing skins,

418: precautions in packing for transport home, 419; preservation of trophies, 420; measurements, 420
Tchegem, the, 41
Tcherkess, the, 40, 56, 67
Tech, Caucasus, 49
Teleki, Count, his choice of rifles and bullets, 397
Tenasserim, 234, 236
Téndwá (panther), 218
Tengri Khan, 291
Tennis shoes for stalking, 28, 371, 387
Tentes d'abri, 395
Tents, for the Pamir, 374; 385
Terai, the Nepal. *See* Nepal
Terek, the, 41
Thamin (Eld's deer), 268
Theodosia, 38
Ther (Capra jemlaica), habitat, 325; characteristics, 326; measurements, 336
Thian Shan mountains, 283, 291
Thibet, 194, 249, 283, 292, 299, 334, 335, 345
Thibetan antelope, 335
Thibetan wolf. *See* Wolf
'Thirteen Years among the Wild Beasts of India,' Sanderson's, 345
Thomas, Mr. (British Museum), 64
Tiflis, 30, 44, 45, 342
Tiger (Felis tigris), the, 44; habitat, 196; of three classes, 197; damage done by, 198; howdah shooting, 199; driving, or beating, 203; sitting up over kills, 208; its method of attacking and killing prey, 211; breeding, 212; age, 213; measurements, 215
'Tiger Shooting in the Doon and Ulwar,' Lieut.-Col Fife Cookson's, 209
Tlee, Mamisson valley, Caucasus, 49
Tockmack, 291
Toledo, 179
Tonse river, 329
Transcaspian railway route to the Pamir, 364, 365
Transport of camp equipage, 379
Triggers, 405
Tromsö, 2, 3, 5
Trondhjem, North and South, 125
Trophies, the trade in, 415; forwarding home, 418; systems of measurement, 420
Tscherek, the, 41
Tschuddi, on chamois, 81, 104
Tsoing (Burmese wild ox), 248
Tuapsè, 40
Tungmar (clouded panther), 221
Tûr, Caucasian, habits and chase of, 51–63
Turatch (sand-grouse), the, 44, 45
Turnscrews, 405
Turkestan, 226, 283, 291
Tyrol, the, chamois in, 77; poachers and keepers, 80; shooting season, 80; preserves and peasant-shoots, 82; cost of a preserve, 83; rights of chase, 84; chamois stalking, 85–97; rifles and kit for stalking, 98–100; chamois driving, 100–109; 282, 289, 322
Tyrolese keepers, 102
Tytler, Major, on the wild ass, 362

UNTHIA BAGH (lion), 194
Ursus arctos (bear of Northern Europe), 114
Ursus maritimus, 15–21
Urup, the, 38

VAERDAL, 125
Vaillant, M., his exploits in South Africa, 232
Valasjok river, 154
Veerubof, Colonel, 31
Victoria Lake, Pamir, 374

Vladikavkaz, 23, 24
Voroneze, 23, 24

Wa (burrel), 299
Wales, Prince of, elk hunting in Sweden, 136
Walker, Colonel C.S., 128, 132
Walouieff, M., 168
Walrus, the, 1; wanton destruction of, 2; size and weight, 3, 4; utilisation of blubber, 4; feeding grounds, 4; tusks, 4; how to kill, 6; winter retreats, 7; habits, 7; breeding season, 8; mode of attacking, 8; boats, apparatus and crew employed in hunting, 9–12; harpooning, 12–14; a typical hunt, 14
Wapiti, 36, 37
Ward, Major, 183, 219; on sambur shooting, 261; on the Cashmere stag, 276; 277, 280, 282, 287, 288; on hunting the Ovis Ammon, 298; 301, 319, 333, 341, 345
Ward, Rowland, 64, 233. *See* Measurements
Waugh, Sir Andrew, his big tiger, 196
Wenersborg, 136
Western Ghauts, India, 355, 360
Weyprecht and Payer's expedition, 17
Whitbread, Mr., 73
Whymper's Alpine tent, 395
Wilde Bay, Spitzbergen, 18
Wild ass, Assyrian (Equus hemippus), 362; Equus onager, 362
Wild boar in the Caucasus, 31; guides for hunting, 32; its cunning and ferocity, 33, 34; modes of hunting, 34; habitat, 35; Spanish, 176, 177
Wild dog, 44, 45. *See* Dog
Wild ox. *See* Ox
Wild sheep. *See* Sheep
Williameenoff, General, 43
Williamson, Mr., quoted, 196; on sitting up over a tiger, 210; 226, 257, 353
Wolf, European (Canis lupus), 226; measurement, 227
Wolf, Indian (Canis pallipes), 225; measurement, 227
Wolf, Spanish, 176
Wolf, Thibetan (Canis laniger; Canis niger), 226; measurement, 227
Wolves, 34, 44, 45; distinction between European, Thibetan, and Indian, 226

Yak (Poephagus grunniens), 249; characteristics, 250; account of a successful stalk, 250; measurements, 252
Yalta, 38
Yang-se-kiang river, 292
Yarkand, 339, 342, 364
'Yo,' on packing, 382
Yourts (Kirghiz tents), 374
Yuz (hunting leopard), 222

Zaizait, 74
Zaruchi, Novgorod, 164
Zelentchuk, the, 38, 39
Zik (clouded panther), 221
Zillerthal, the, 95
Zubr (aurochs), 38, 39, 69, 167, note
Zubr grass, 172

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